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VOLUME 1

MACKENZIE VALLEY PIPELINE INQUIRY

RESPONSES OF CANADIAN ARCTIC GAS PIPELINE LIMITED TO COMMISSION COUNSEL SUBMISSIONS

CHAPTER 1 ... SOCIO-ECONOMIC ISSUES

CHAPTER 2 ... PROTECTION OF ENVIRONMENT AND LAND

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FILE NO. 58918 JJM
December 6, 1976

Mr. Ian Wadell
Special Counsel
Mackenzie Valley Pipeline Inquiry
c/o Law Courts
800 West Georgia Street
VANCOUVER, British Columbia

Dear Sirs:

Re: Arctic Gas Responses to Recommendations for Terms and Conditions

Enclosed are the responses of Arctic Gas to the recommendations for terms and conditions that were advanced, by way of argument, by Commission Counsel, Foothills and participants in Yellowknife during the week of November 15th, 1976.

As you appreciate, limited time has been available for preparation of these responses. Arctic Gas has therefore responded to many recommendations for terms and conditions in the same level of detail in which the various recommendations were made. In some cases, revisions have been suggested or it has been pointed out that the level of detail has not proved necessary at this stage.

We wish to stress that our detailed response has been necessitated solely by the extremely detailed nature of the recommendations for terms and conditions and the Arctic Gas responses cannot be taken as giving support to the overall approach taken by Commission Counsel and certain of the participants, particularly CARC.

We fully agree with and support the position put forth by Mr. Carson Templeton in his argument:

"In my opinion, the terms and conditions should be written as

. . . 2

a performance specification - not as a construction specification or project handbook. None of us can write a complete handbook for this project nor can we, or should we attempt to, write a detailed construction specification at this stage. We should, in my opinion, specify as clearly and precisely as we can the results or performance we expect the project to achieve, not how to achieve those results or that performance . . . When and if the government adopts terms and conditions, the terms and conditions will change from recommendations to regulations and may well prevent productive innovation by the regulatory agency and/or the permittee later."

Arctic Gas shares with Mr. Templeton the opinion that the "agency" employees and consultants and Arctic Gas are best able to prepare the "how to achieve" and "demonstrations of achievement" details which will be required later.

We would also like to draw attention to the practice, common throughout the Commission Counsel Submission, of introducing apparently arbitrary quantitative standards to be applied during various phases of pipeline development. In many instances, there is no justification for the standards, either in the body of the report, in the testimony before this hearing, or in the scientific literature. In others, notably the proposed use of the Standard Project Flood, recognized techniques seem to have been misapplied. Specific criticisms of those recommendations which include quantitative standards form part of our responses to the Commission Counsel Submissions. Where we have found the recommended standard to be arbitrary or ill-founded, we have either:

a. suggested that there is insufficient information available to arrive at a precise quantitative standard and that each case must therefore be decided on its own merits; or

b. in those areas where there is a sufficient body of information, suggested a more realistic standard based on our own understandings of the subject.

We would concede that in some subject areas, where there is presently insufficient information, it would be desirable from the point of view of both Applicant and Government to have quantitative standards. In such cases, we would look favourably on a recommendation that demonstrated: first, that an area of concern had been identified; second, that there was a reasonable expectation that quantitative standards could be developed; third, that as yet there were insufficient data available to define such standards; and fourth, that studies should be undertaken by government agencies and/or Arctic Gas to arrive at suitable quantitative criteria.

This point was made in oral argument.

It might be argued that even poorly documented quantitative standards are better than none at all, better than the site-specific, case-by-case approach which Arctic Gas generally prefers. (For example, Commission Counsel recommends that stockpile sites be located at least 300 feet from any river bank or shore, that wharf sites be located at least ¼ mile from any stream or river mouth, that all fuel and chemical storage areas and major camps shall be located at least 1,000 feet from any river bank or shore, and that no blasting be permitted within one mile of sites where fishing is actively in progress. Arctic Gas has responded that such distances are arbitrary and meaningless and that each site must be assessed on its own merits, before exact locations are determined). We would argue that there is great danger in establishing ill-considered standards, giving an aura of authenticity to quantities which have no basis in fact and fostering the notion that because some facility has been constructed in compliance, environmental and social concerns are necessarily protected.

You will appreciate that these responses have been prepared in a rather limited amount of time. If you feel that you would be assisted by amplification, Canadian Arctic Gas is, of course, ready to co-operate in any way.

Yours very truly,

John J. Marshall

John J. Marshall

JJM/jr

cc. Mr. Ian Scott, Q.C.

cc. Mr. R. J. Gibbs, Q.C.

cc. Participants

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CHAPTER 1

SOCIO-ECONOMIC ISSUES

I N D E X

GENERAL COMMENTS ON "INTRODUCTION" - "BASIC ISSUES" - "NATIVE SOCIETY" - and "NATIVE LAND CLAIMS ... I-1

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GENERAL COMMENTS ON

"INTRODUCTION" - "BASIC ISSUES" - "NATIVE SOCIETY" and "NATIVE LAND CLAIMS"

The responses of Canadian Arctic Gas to the recommendations made by Commission Counsel and the other Participants are in general confined to recommendations which seek to impose obligations on Canadian Arctic Gas. Many of the concerns and recommendations mentioned in the submissions of Commission Counsel have to do with government structure and socio-economic matters over which Canadian Arctic Gas can have no control. In most cases, Arctic Gas does not feel it appropriate to make any detailed comments on the desirability or undesirability of such recommendations. The Arctic Gas reply to Commission Counsel's findings and recommendations on the basic socio-economic issues forms part of the Arctic Gas final argument made to the Inquiry on November 15 and 16. Reference should be made to pages 31635 to 31721-2 in Volumes 200 and 201 of the transcripts for the Arctic Gas position on the basic socio-economic issues. The argument indicates some fundamental disagreements with the approach used by Commission Counsel in the treatment of the subject matters dealt with under the headings "Basic Issues", "Native Society" and "Native Land Claims". As pointed out by Arctic Gas, the submissions of Commission Counsel do not adequately deal with the future of native society in the event that non-renewable resources development should cease and the economy of the North should stagnate, especially in view of the demographic characteristics of the native population. This argument is not repeated here.

Similarly, the oral argument has set forth the Arctic Gas position in respect of the issue of land claims.

Nevertheless, Arctic Gas wishes to deal with a few points appearing in Commission Counsel's submission under the heading "Basic Issues" with which it did not deal during the oral submission. These are as follows:

1. Fears of Interference with Native Resource Harvesting

The general discussion found at "Native Society" - p. 4, paragraph 9, argues for the distinction between actual and perceived interference of the pipeline or other development with native resource harvesting. It goes on to say that although perception of a threat may be invalid, the fact that such a threat is perceived has of itself grave consequences. While this point is true, it seems to us that the appropriate response is that where there is misinformation with respect to danger, disruption, interference, and so on, the answer is to provide accurate information through an education campaign appropriate to the background and the level of understanding of the people who have the fears so that they may come to appreciate what does pose a realistic threat and what kinds of threat are imaginary. Such a campaign will take time but it should be noted that there is a significant amount of time available between now and when it is proposed that major construction should begin. This Inquiry certainly has done a great deal to aid the understanding by northerners of the nature of development associated with building the pipeline. As Arctic Gas witnesses have told both the formal and community hearings, there will be some logistics activity along the river first but the affected areas are already subject to similar disturbance and it is not of a nature which significantly affects game

resources. It is not proposed that major construction activity would take place at the earliest before the winter of 1979-80. It does not seem defensible to say that a better alternative to a programme of providing accurate information, such as the one discussed under the heading "Action Communities - Impact Information Centres" of this Volume, is to block a development which is seen as being in the national interest because of unfounded fears and anxieties.

This point is relevant to the statements contained at pages 2 and 3 of Commission Counsel's submissions under the heading "Basic Issues". There it is said that location of a pipeline in the vicinity of Old Crow would pose a "threat to the settlement of Old Crow" because it "would lie between the community and its traditional resource harvesting area - Old Crow Flats". The submissions of Commission Counsel, however, fail to specify the way in which location of the pipeline in the vicinity of Old Crow would bring about that result. There is no doubt as to the fear of the residents of Old Crow of the effect of a pipeline on their way of life but the evidence is clear that actual impact on the traditional activities of Old Crow will be minimal. The same point is again relevant with respect to paragraph 2, page 3, in respect of the concern expressed by the people of Fort Franklin and Fort Norman that the Great Bear River might in some way be damaged or affected by the pipeline.

2. Routing and Native Communities

At page 3 - Basic Issues - last paragraph, it is stated:

> "In principle, the pipeline should give wide berth to all of the small Dene communities of the Mackenzie Valley."

Absolutely no support is provided in the Submission for this sweeping recommendation. It is assumed that a pipeline will in some way intrinsically pose a danger to the small communities but the nature of this presumed danger is nowhere spelled out. Presumably danger could come from two sources: - (a) Harmful interaction between construction crews and native communities - isolation policies elaborated in evidence would seem to alleviate this danger; (b) Serious interference with harvesting activities - reference is made to the evidence as to how small this interference will actually be. Mr. Marshall outlined Arctic Gas' position on route selection during the course of final argument (See T: 201 - 31731 to 31798).

Having made the above general comments, the balance of this material comments mainly on the specific recommendations made by Commission Counsel. Failure by Arctic Gas to provide any or full comment on any recommendation which is contrary to the evidence and argument presented by Arctic Gas should not be construed as a change in the Arctic Gas position on that particular matter.

Native Society - Specific Recommendations and Comments

Land Use (p. 9)

In the first paragraph on this page, it is argued that "activities such as petroleum exploration and development and pipeline construction represent a strong potential for conflicts with native land use." Arctic Gas has shown that there is only a very small proportion of the land where such conflicts might possibly occur, and in most cases, the conflict really does not materialize. Where conflicts occur despite our best efforts, fair compensation will be provided in an expeditious manner.

Native Society - Renewable Resources (p. 12)

Arctic Gas agrees that native involvement in utilizing the northern renewable resource base in a desirable objective and one which appears to be integral to their expressed aspirations for the future. The Commission Counsel submission repeatedly describes the importance of traditional economic systems to the psychological and financial well-being of northern residents. For example, on page 27 of the Native Land Claims section, the document states: "It would seem to us that starting a massive project in the non-renewable sector before the renewable sector has been established would undermine the option which the renewable sector is designed to give." It also indicates that the "siphoning-off effect of pipeline employment with its high wages is likely to be prejudicial to the development of this sector, given the level of participation it requires". Beyond making the obvious point

that the "development" of a renewable resource economy is hardly necessary since natives in the north have pursued traditional hunting, fishing, and trapping activities for many thousands of years, it is also important to take a hard look at the economic realities in the Northwest Territories.

Although Mr. Ruttan of the Indian Brotherhood has proposed that natives control, develop, and manage a renewable resource, land-based economy as the best solution to the problems confronting them, such a solution flies in the face of economic realities. The alternative development strategy proposed by Mr. Ruttan will not provide enough jobs to reduce significantly the existing unemployment rate, nor will it satisfy the expectation of the increasing numbers of young natives who will enter the job market. The testimony of the Indian Brotherhood on alternative development is correct in stating that existing estimates of the true value of resource-oriented, land-based activities in the Canadian north are seriously undervalued. Existing economic measurement techniques do not accurately document the value of nonwage activity.

However, no matter how great the true value of traditional resource-oriented economy, the essential problem remains: a resource-oriented economy in the Canadian north will not provide sufficient jobs for the natives. It will not provide opportunities for sufficient economic growth, nor for significant reductions in the unemployment rate.

The submission correctly points out that resource harvesting activities can be compatible with participation in wage employment.

Arctic Gas evidence has shown that part-time involvement in wage employment in the petroleum industry has provided in the past, and can continue to provide, the money necessary to "grubstake" native hunters and trappers. It enables them to become more efficient resource harvesters, since they can afford better equipment with which to take game.

Arctic Gas agrees with the recommendation that employers should be prepared to arrange flexible work schedules for native people in order that they may more easily participate in land-based activity, whether for economic or cultural reasons. We have testified to the effect that this policy will be in effect on our project, and we will be supportive of any reasonable initiatives along these lines (T. 161: 24799).

Native Society - Wildlife Management (p. 14)

This is a matter for government response.

Native Society - Education and Language (p. 16)

The first sentence of Paragraph 1 assumes that there will be a big increase in the white population of the pipeline impact region as a result of construction of the pipeline. This is valid neither during the construction nor the operations phase of the pipeline.

During the construction phase, non-northerners will be hired only from southern hiring halls and will be returned to the south on

termination of their employment. Southern construction workers will not be accompanied by school age children and therefore will not impact on territorial school practices. The families of northern workers will typically remain in their home communities.

During the operation phase, Arctic Gas personnel will be concentrated at only three locations, Inuvik, Norman Wells, and Fort Simpson. In each, there will be between 70 and 80 Arctic Gas employees, of whom as many as possible will be native. In all three of these communities, there are already sizeable white components; thus, the impact of the white Arctic Gas employee on the communities and on the school system will be minimal.

It is apparent from the above that there is no basis for inferring an increase in whites into any but the three communities mentioned. Thus, there is no reason at all to anticipate externally induced changes in the schooling arrangements. Similarly, in Inuvik, Norman Wells, and Fort Simpson, there is no reason to anticipate changes in the pattern of parental pressures currently found in these communities. Note further that the native people have fought hard for the changes in curriculum and language of instruction they have recently achieved. They would certainly not passively stand by while these hard-earned gains were challenged by new arrivals in the community, in the unlikely chance that the latter were moved to try to change the previous schooling arrangements.

The same comment applies to paragraph 2 of the Education and Language discussion. It is most unlikely that Arctic Gas employees in the communities of Inuvik, Norman Wells, and Fort Simpson would want or would be able to challenge the existing arrangements in terms of annual terms and holidays, classroom hours, curricula used, and language of instruction, etc., in the school.

The language of the school room deserves a word of further comment. There are already sizeable white populations in these communities. Accordingly, decisions have had to be made previously and are already in force which make adequate provision for children of white and of native parents. Such provisions would undoubtedly be satisfactory as far as the children of Arctic Gas employees were concerned. Thus, there is no need to anticipate that changes in the school would come to pass to "contribute to intergenerational difficulties and add to present threats to the future of native culture."

Recommendations

1. Local education committees, composed of native people, prepare a school year, classroom hours, and other institutional arrangements they regard as compatible with local custom and need.

RESPONSE:

It is necessary to reiterate that in Inuvik, Fort Simpson and Norman Wells, there are already substantial proportions of white people, many of whom are permanent residents of the community. Accordingly, the recommendation which specifies that local education committees should be

composed of native people, presumably to the exclusion of whites, seems most inappropriate.

2.-10., pp. 17 and 18, and 13., p. 19

RESPONSE:

These recommendations are all matters for government response.

11. It is recommended that in communities where native people regard their language as important, non-native children learn native languages, and that native children learn English as a second language.

RESPONSE:

This is relevant only in terms of the reaction of white Arctic Gas employees. It would appear that non-native parents should be given the option whether their children learn the native language.

Native Society - Country Foods (p. 20)

In regard to the first paragraph, the evidence led by Arctic Gas has established that the operation of its pipeline would not disrupt production of country food in the area. The construction of the pipeline will proceed speedily enough that such local disruption as might occur during construction would typically last no more than one season.

With respect to Recommendation 1, insofar as the harvesting

of country foods has both the economic significance and the cultural or spiritual significance to native people, which the testimony led by the native organizations has stated that it does have, it would seem to be entirely unnecessary to "extend programs to encourage and subsidize the production of country food within the Territories" as this recommendation proposes. Similarly, "new programs should be developed as necessary to this end", would also seem to be an unnecessary recommendation.

Recommendation 2 is a matter for government response.

Native Society - Energy Supply to Native Communities (p. 22)

Arctic Gas has filed with the Inquiry a copy of its study of the alternative costs of fuels in a number of communities along the pipeline. It appears that the Inquiry staff and Arctic Gas are in agreement that not all communities can be economically served with gas piped laterally from the main pipeline. Arctic Gas has stated in Section 14.c of its application that it recognizes a responsibility that natural gas be made available to communities if this reflects the wishes of the residents. To this end it has indicated that it will install valves and fittings at appropriate points in the proposed line to facilitate the future construction of distribution facilities to serve communities. In those communities where gas is the best fuel from an economic point of view, Arctic Gas has indicated that it would be prepared to build the appropriate feeder line to the edge of that

community. In those situations where the economics put gas at a disadvantage relative to alternative fuels, and thus would involve a subsidy by other pipeline users, Arctic Gas is not in a position to unilaterally determine that it will provide that service. This is a matter to be considered and determined by government. (Trusty, T 158: 24275)

With respect to the suggestion that a royalty or tax be levied on the pipeline, reference should be made to Arctic Gas' general position on impact funding under the heading "Action Communities - Impact Funding". At the present time, the burden of subsidizing energy uses is borne by Government. It is implied in the recommendation that it can be justified on the basis that such a subsidy would be a form of compensation for disruption, and Arctic Gas does not feel this compensation is necessary, having regard to the direct benefits of its project.

With respect to the recommendation that the program requires administration by the Authority, Arctic Gas feels that the creation of such a special bureaucracy is unnecessary in light of its preceding comments on the recommendation that a special tax or royalty be collected. The current governmental framework, expanded if necessary, which deals with energy matters should be used.

Native Society - Legal Systems and Institutions (p. 24)

This is a matter for government response.

Native Society - Traffic to Communities

Recommendations

1. Community-related needs must have priority over pipeline-related traffic moving through jointly used community infrastructure.

2. Under the general administration of the proposed Authority, a local committee should be established for every community where facilities are jointly used. The committee should consist of community residents, a representative of the pipeline Company, and a representative of the territorial government. Whenever pipeline related use of facilities conflicts with community needs, the committee could impose limits on pipeline utilization of facilities which would ensure that community needs were served before those of the pipeline.

RESPONSE:

Arctic Gas has testified that "with respect to barges, it is planned that sufficient barge sets will be added to the existing fleet to ensure that project requirements will not in any way detract from the barging capacity required for community supply or other traffic volumes." (T:162, 25073.)

Arctic Gas is in agreement with the recommendation that should its efforts fail to adequately provide for the increased volume of project traffic, community needs should take precedence over pipeline needs. Our community consultation program as described in "Action Communities - Impact Information" will ensure that conflicts over use of joint facilities will be solved to the satisfaction of government and the community concerned.

3. Transient pipeline workers moving through community transport facilities must be kept isolated from the community.

RESPONSE:

Arctic Gas has testified that in planning for the movement of personnel in and out of the north, Arctic Gas has been particularly conscious of the need to ensure there will not be any adverse impacts or impositions on communities from in-transit personnel. Accordingly, the planning has included the delineation of contingency measures to be used in the event of delays or disruptions to the normal movement patterns as a result of weather conditions or other factors. All southern personnel destined for northern job sites will be flown out of a southern centre on large jet aircraft. Those destined for a job site close to an Arctic Gas 6,000 ft airstrip will be flown directly to that strip. Personnel destined for job sites that have only 2,400 ft airstrips will be flown to a larger airstrip and transferred directly to the job site. This transfer operation would take place at one of the large Arctic Gas strips or at the airport of one of the large communities (Inuvik, Norman Wells, Fort Simpson, or Hay River), depending upon the location of the destination job site. Arctic Gas airstrips will be used in order to minimize air traffic at nearby community airports (Vol. 162, pp. 25066-25067). Further, "Arctic Gas preference would be that contingency plans should be so designed that southern workers are not taken into a town even though an aircraft might be diverted to an airstrip near a community for an unscheduled stop" (Vol. 164, p. 25405).

Native Society - Access to Communities

Recommendations

1. Development sites be in the nature of bunkhouse or camp operations, where workers live and work. Employees would not normally be allowed outside the camp and work boundaries of the construction and right-of-way areas. Failure to comply with this should bring termination of employment.

RESPONSE:

This suggests the kind of controls on construction camp workers which were proposed by Arctic Gas (Vol. 161, p. 24802 and Vol. 162, p. 25045). The provision in the recommendation for termination of employment obviously requires union cooperation.

2. Insofar as rights-of-way between sites are necessitated by the nature of the work at hand, these should be negotiated--with regard both to routing and means of travel--with Dene or Inuit communities through or over whose lands such routes would have to pass.

RESPONSE:

If this recommendation were reworded to state "insofar as rights-of-way between sites are necessitated by the nature of the work at hand, these should be determined in consultation with residents of adjoining native communities", this formulation would be acceptable to Arctic Gas.

3. Non-native administration should, unless the native peoples request otherwise, be situated either at the larger centres of the region (e.g. Inuvik or Yellowknife), or at the construction sites. In general, the non-native bureaucratic presence, even in the Action Communities, should be kept to a minimum.

RESPONSE:

This is a matter for government response.

NATIVE LAND CLAIMS

The Arctic Gas reply to Commission Counsel's finding and recommendations on native land claims was given as part of the Arctic Gas final argument made to the Inquiry on November 15 and 16. Reference should be made to pages 31655 to 31681 in Volume 200 of the transcripts for that portion of the argument dealing with land claims.

ACTION COMMUNITIES - SPECIFIC RECOMMENDATIONS AND COMMENTS

Action Communities - Community Energy Supply (p. 9)

The responses to all these recommendations are contained under the heading "Native Society - Energy Supply to Native Communities."

Action Communities - Impact Information Centres (p. 11)

Arctic Gas agrees that there is already and will continue to be a need for a process to provide public information about the pipeline project. People should be made aware of the nature, location, scope, and timing of pipeline-related activity. They should be told about the likely effects of this activity and be given an opportunity to air their views on it. Such an information system should also have a consultative function so that, to the maximum extent possible, local residents can have input to project decision-making which may affect them. They will also then have the basis for making an informed decision on the degree to which they themselves wish to participate in the project.

We do not agree that such a program should focus only on the so-called "action" communities. In fact, it is the smaller, predominantly native communities which will be affected most adversely if there is a breakdown in communications.

An impact information program should not have the responsibility for quantifying socio-economic impact for the purposes of regulation or control. The responsibility for performing this kind of assessment should lie with those who have the responsibility for the consequences

of impact. Under present arrangements, that function would lie with the N.W.T. Government and would be an input to the Federal-Territorial Regional Planning Committee. The information program should be able to provide input to the assessment and to communicate the results, but should avoid duplication of and competition with the official process.

Arctic Gas also differs considerably with Commission Counsel on their perception of how an impact information program should be administered. Arctic Gas plans to establish and operate a comprehensive community information and consultation program. The program will be based on the principles we have just outlined and will be tailored to meet the needs of our client population in the north. We will be using local people as consultants and resource people, and this will be an integral part of Arctic Gas' management information system. Both the Association of Municipalities and native groups spoke before this Inquiry about their inability to have enough influence on decisions which profoundly affect them, even those of a purely local nature. The program we propose will give Arctic Gas a tool which can be used to provide as much local input as possible into project decisions.

It is clearly in Arctic Gas' own interest to see that this program functions well, because we, as a company, are going to have to live and work effectively in the north for a long time to come. We consider it appropriate for authorities to monitor our performance of this function. However, we think that duplication of effort would be counterproductive and confusing to the very people who are supposed to be enlightened.

Action Communities - Impact Funding (p. 14)

Much evidence has been heard by this Inquiry about the likely nature and extent of socio-economic impacts which may occur in the north if a pipeline is constructed. Arctic Gas has demonstrated that due to the careful planning which has gone into their project and to the policies which they have adopted and the procedures which they will be implementing, these impacts will be much more positive than negative. Arctic Gas has undertaken the responsibility to construct their project in a proper and controlled manner and to bear all those costs which are a direct result of their proposed action. Some examples include construction of housing and increases in community infrastructure to meet the needs of our O & M workforce, construction of new or improvement of existing wharves and airstrips which we will be using, a company operated community consultation and information system, and the cost of on-the-job training for northerners. These can be referred to as internal costs.

Regardless of how well a project of this size is planned, however, disruptions in the society and economy in which it is built can occur. These disruptions can only indirectly be related in a causal way to the project itself, since they are as much a function of the nature of the economy itself and the socio-political circumstances of its people. Some examples which can be taken directly from the Commission Counsel's submission include general wage and price inflation compensation payments, a labour pool to meet job vacancies in public services, capital provision to local businesses and additions to schools,

hospitals, or other public infrastructure to meet the requirements of the non-project population. These disruptions can be described as external costs.

In Arctic Gas' case, if some external costs are incurred, the responsibility equation, to be fair, will also have to include the gas producers, and all others who benefit from development. The ameliorative measures suggested, in Commission Counsel's submissions, to cope with many of these negative impacts if they occur clearly involve redistribution of income, for example. It is difficult to see how a private corporation can or should take on such a responsibility. Arctic Gas will be a highly regulated company which, as a good corporate citizen, will pay substantial taxation to various levels of government as compensation for services it receives and as a contribution toward the social wellbeing of the society of which it is a part.

Adverse impacts which may occur in the north are not "extra-normal" in nature or in incidence of cost or effect, but only in scope and timing. They would most likely involve shortfalls of the same services which are presently being supplied to the people of the north, especially those in the Mackenzie valley. The municipalities and the territorial governments bear the responsibility for the bulk of public services or for the consequences in the case of a shortfall in private services. Administrative structures and programs are already in place to meet the needs. In fact, the Inquiry heard evidence from Mr. Yates and Mr. Elkin to the effect that a Regional Planning Committee had been

established and was working toward the task of preparing to cope with a growth surge if it should occur. However, evidence given by Mr. Lafferty and various other witnesses on behalf of the Association of Municipalities spoke to the relatively cumbersome budgeting procedures required to get money from Ottawa, where the financial responsibility and resources lie, to the Territories, where the services are required. It was suggested that more financial flexibility would be required to adequately meet demands of abnormal size and timing.

Let us consider then how Arctic Gas and the rest of the private sector which is proposing increased development in the Territories fits into the responsibility equation for external costs. Once the pipeline is installed and in operation, the industry will be providing substantial revenues to governments through property taxation, corporate income taxation, and royalties. Only a small portion of the property taxation will go directly to municipalities. The rest will go to the Territorial Governments, and under present revenue-sharing arrangements, all of the royalties, which are much more significant in dollar terms, and the income tax will go to the Federal Government. One difficulty with these forms of taxation as revenue sources which governments could use to cope with external costs is that they will occur only well after such costs will already have been incurred. During the construction phase, revenues will flow to the Territorial Government from fuel taxes and to the Federal Government from the personal income tax of workers, the corporate income tax of contractors, and the federal sales tax from materials suppliers. These revenue sources more closely match any

expenditures which may be incurred in a temporal sense, but some problems are still obvious.

Since the Federal Government is ultimately responsible for all government functions in the Territories, all of these revenues should be applicable to any public costs of development. Even though the municipalities and the Territorial Governments have the responsibility for most of the consequences of any adverse impact, they do not, under present arrangements, have direct access to many taxation revenues which could be used to help them meet this responsibility. It would seem reasonable that the Territorial Governments should share to some greater extent in project-related revenues, which they in turn should share with impacted municipalities.

Although Arctic Gas does not believe it is appropriate to suggest what form financial arrangements between governments should take, they would nevertheless like to illustrate how these arrangements could work in order to show that such revenue sharing is feasible. Royalties in whole or in part could be earmarked for the Territorial Governments, for example. Corporate income tax paid by Arctic Gas and the Producers could also be made available. Since the Territories do not have provincial status, they at present would have no access to provincial corporate income taxes paid by southern contractors who work in the north. If an Alberta contractor works in Saskatchewan, for example, there are existing interprovincial formulas which enable Saskatchewan to collect the relevant income taxes. Such formulas could be applied in the north

during our project. Personal income taxes, which Mr. Nickerson in his testimony said may soon be levied by the N.W.T. Government with Federal cooperation, are a slighly more touchy matter. The incidence of provincial personal income tax is determined by place of residence, and the bulk of the construction wages paid on the Arctic Gas project in the Territories will be to workers who will officially be residents of southern provinces. However, it may be possible to reach some agreement with the Federal Government and the Provinces for the purposes of this project to base taxation on number of days of the year spent working in the north. A similar formula is used by the Federal Government for Canadians who earn a portion of their income working abroad.

It has been suggested in the Commission Counsel's submission on terms and conditions that "extra-normal" impacts be financed through an impact fund to be established by the successful applicant. The concept of an impact fund is not unique to the aforementioned submission and is worthy of some comment here. It seems to us that such a fund would only be useful as a tool for governments to use in meeting the peculiar demands which may be placed on them due to the abnormal scope and timing of any external costs. It would be most useful in bridging the time gap, which was discussed earlier, between when the costs might be incurred and when normal taxation procedures could provide revenue to help defray the costs. The revenue-sharing measures suggested earlier should be adequate to meet this need, but if such a tool is deemed necessary, it should be established and funded by Govern-

ment as it was in Alaska in relation to increased hydrocarbon development. As has been shown, adequate revenues will flow back to the government from industry through taxation.

In order to put Arctic Gas' position on this issue into perspective, we will attempt to quantify some of the revenue streams to which we have referred. Various witnesses have estimated pipeline property taxes in the N.W.T. to be in the order of $2 million per year. Arctic Gas' estimate is that property taxes in the second year of operation will be around $2 million, will rise to close to $7 million in the third year, and will decline to around $3 million per year after 20 years. In addition, we estimate that property taxes payable to the Yukon will be approximately $1/2 million in the third year of operation, will rise to $850,000 in the fourth year, and will decline slowly to $650,000 after 20 years. The only corporate income taxes which we can estimate are those for Arctic Gas, which could amount to $230 million per year during peak years for that portion of the line north of 60°. Personal income taxes and contractor and producer corporate income taxes are impossible to quantify at this time, but could be significant. Royalties will be significant, although precise rates are not yet known. Just to show the order of magnitude, however, if the wellhead price of gas was $1/mcf and the royalty rate was 12 1/2%, then at projected peak production from the Mackenzie Delta of 2.25 bcf per day, the annual royalties would total $102.6 million. Arctic Gas is not trying to suggest how governments should share their revenues, we are just trying to demonstrate that funds generated by the project will be very large in

relation to any potential external costs.

Action Communities - Local Government (p. 16)

Arctic Gas clearly should have no position on what are appropriate local government structures or policies in the Northwest Territories, since this is obviously an issue to be decided by the citizens of the north and of Canada as a whole through their representative governments. However, since Commission Counsel has offered certain views on the subject, we feel we must make a general comment on this issue.

Arctic Gas has committed itself, through its plans for comprehensive community consultation, to doing everything within its power to ensure that local opinion and preference is directly reflected in our decision-making process. In that sense, we believe we are contributing positively to the objective of greater participation and control by northerners over events which affect their lives.

Action Communities - Local Business, Employment and Labour Force (p. 17)

The position of Arctic Gas on these issues is covered by our responses to sections on "Northern Business", "Basic Issues", and "Employment and Training".

Action Communities - Housing (p. 18)

Arctic Gas has recognized in its application and in its evidence before this Inquiry the importance of not exacerbating the critical shortage of adequate housing in the north. Governments have extensive programs geared to the particular circumstances of northern living. It is our policy to cooperate to the maximum extent possible with the government which quite properly bears responsibility for this universal social need. This means that we will meet our own requirements in a carefully planned and staged manner so as not to overextend local capacity. In addition, we will work closely with the communities in which we will be locating housing or other facilities to ensure that our requirements are consistent with their development plans and priorities.

The following recommendations of Commission Counsel which propose action by Arctic Gas are consistent with Arctic Gas policy and, as such, are acceptable in their present or slightly altered form:

#2 - Arctic Gas' plans for its own housing should be consistent with community development plans and should be subject to consultation with community officials.

#6 - Operations and maintenance staff accommodation must be approved by N.W.T. Housing Corporation at the design stage.

#12 - Arctic Gas' Community Information Program should assist in distributing information on housing availability and could be used to discourage in-migrants from going to smaller settlements and placing demands on housing and other services.

Recommendations #11, 13, 14, and 15 refer only to action required by governments or communities, and therefore we have no comments.

One comment we have is that if all the duplicative bureaucratic structures envisaged by the Commission Counsel report are implemented, the strain that the people who fill the jobs involved will place on the housing market will be significant.

Recommendations with which we disagree or which we think should be subject to revision or negotiation follow, along with appropriate comments.

Recommendations

1. A survey of current housing adequacy, and a land use and site development plan should be expeditiously prepared for each community to enable the smooth delivery of serviced land for housing and of sites for temporary housing (trailers, campers) in those communities where the demand will probably exist. This should be the responsibility of the appropriate departments of the Government of the Northwest Territories, but must be conducted with the full participation of community representatives and in the light of their expressed desires for future stability and growth. The Pipeline Company and the Federal Government should share equally the cost of assembling and developing serviced land in the action communities where requirements will be high. This would help to

ensure that sufficient funds were available from normal sources for servicing needs in the lesser impact communities.

RESPONSE:

Development plans have already been done by the N.W.T. government with special pipeline-related government funding for each community which is likely to be affected, except Fort Good Hope and Wrigley, both of which opted out of the exercise. Arctic Gas fully expects to share in the costs of assembling and developing land necessary to meet its own requirements for housing or other facilities. Any requirements beyond this should be met by government in a normal manner using taxation revenues.

3. All structures provided by the Company for accommodation and recreation for the construction crews should be of modular design and of high quality in order that they may be reused in the communities later. The N.W.T. Housing Corporation should advise on the design of such structures for N.W.T. communities following consultation with the communities to which they might later be assigned. These designs would be approved at the design review stage.

RESPONSE:

It will likely not be practical to design modular facilities in such a manner as to meet both pipeline construction and community needs. A mobile camp module will always be just that, and it may detract from the aesthetics of the community. This assumes all such structures will be surplus to Arctic Gas needs at some point and still have a useable life. This may not be the case. However, there will be

instances when there will be camp modules which are surplus to our requirements, and in such cases, we will make arrangements for their disposition with interested communities.

4. Prior to pipeline construction, the federal government should provide adequate funds to meet 50% of the costs of the housing required within communities for the construction phase, plus the general housing rehabilitation requirements of the community, as defined by the N.W.T. Housing Corporation. It is considered that the remaining 50% of such costs will follow in part as a result of recommendation No. 3; that is, a proportion of the Company's share could be embodied in good quality structures turned over to the community following pipeline construction. The disposition of any remainder of the Company's share could be the subject of discussion between the Company, the N.W.T. Housing Corporation, and the Authority.

5. Funds for housing units should not be reallocated from other parts of the Northwest Territories or from "non-action" communities to meet housing needs in action communities. In the case of unforeseen impacts on housing need, an emergency relief fund should be made available by the Company via the Authority so that housing supply may be kept relatively stable. One possible way of meeting extraordinary surges in accommodation demand would be by assembling a stock of mobile housing units that could be rapidly transferred from one location to another.

RESPONSE:

These refer to company participation in a general housing program, which is clearly the responsibility of the appropriate governments. We will meet our own needs without aggravating the overall situation. We should not be asked to accept more responsibility than that.

7. Assistance to permanent employees should favour home ownership by providing low-interest mortgages in place of and at more attractive rates than rental allowances.

RESPONSE:

This may not be an appropriate policy in keeping with Recommendation No. 8 and ignores the problem of abnormally high capital cost in the north.

8. All permanent employees, native northerners or otherwise, should receive the same housing subsidies. These should be in line with existing public housing subsidies in the N.W.T., i.e., the resident should pay no more than 25% of income or economic rent, whichever is the lesser, for accommodation.

RESPONSE:

Housing subsidies for all permanent employees, native northerners or otherwise, have to be considered as part of a total compensation package. Arctic Gas will have to have an attractive package in the interests of good employee relations. The housing subsidy component

of that package must remain an Arctic Gas policy decision, and may vary from other private or public subsidies.

9. Prior to pipeline construction, 75% of permanent staff housing should be completed and rented out during the construction phase to residents of the N.W.T. This would have the effect of alleviating the immediate housing shortage. At the same time there should be no let-up in the rate at which new housing is constructed. A sudden increase in the housing stock will only provide an immediate stop-gap to partially alleviate a chronic long-term shortage.

RESPONSE:

This ignores the lead time problems associated with building housing of a permanent nature in the north and would tend to increase labour shortage problems and inflationary pressures. Mr. Trusty's evidence on staging the build-up was directed toward alleviating such problems. In addition, this creates landlord-tenant problems that we, as a pipeline company, are not equipped to handle.

10. Incentives should be established to encourage the development of local construction companies and prefabrication plants. Discussions should be held with the Company to encourage it to provide the initial and continuing capital for this purpose. Also, supplies and labour for the construction of Company housing should be obtained locally to the extent practical.

RESPONSE:

This would also exacerbate labour shortage and inflationary pressures. In addition, if any such assistance is provided to local entrepreneurs, it should apply to all businesses, not just housing, and should be done under the auspices of government through something like the Federal Business Development Bank. Company involvement in this kind of venture is considered to be inappropriate. Refer to the section on Northern Business for a more complete discussion of this issue.

Action Communities - Education

As in the Education and Language sub-section under Native Society, the first paragraph on this page appears to assume there will be no control on in-migrants seeking jobs in pipeline and related employment. As emphasized before, it is anticipated that hiring halls for non-northern workers will be located in the southern provinces, that non-northerners will be hired only at these southern hiring halls, and that upon termination of their employment, they will be returned to the southern cities where they were hired. Non-northern construction workers will not be accompanied by their families. There is no basis for anticipating a very significant increase in numbers of in-migrant families to the Northwest Territories as a result of the pipeline construction process. It follows that the assumption on which the recommendations are predicated, "that the number of school age children would increase", is not a valid assumption.

With respect to the operations phase of the pipeline, there will be some in-migration of families of workers who will be involved in the operation of the pipeline. However, the initial start-up workers who will probably work a rotation schedule, will be replaced gradually by permanent workers, either native or white, whose families are relocated in the three operations centres of Inuvik, Norman Wells, and Fort Simpson. The point to be emphasized here is that this would be a gradual process and accordingly, the school systems, knowing the number of personnel involved, would have adequate lead time to expand the capacities of the schools as necessary.

Recommendations

1. Using estimates of both normal growth and of pipeline population projections developed at final design stage, the increase in students which can be attributed to pipeline development can be determined. From these figures, the Department of Education can anticipate the number of classroom additions which must be constructed given sufficient lead time.

RESPONSE:

This is a matter for government response.

2. Funds for the construction of these facilities beyond the requirements of normal population growth should be a responsibility of the Company. These funds would be administered by the Authority, in conjunction with the NWT Department of Education.

RESPONSE:

Refer to the Arctic Gas position on impact funding under the heading - "Action Communities - Impact Funding".

3. If large numbers of students are anticipated for only a short period during the peak of pipeline construction, the Company should be responsible for providing modular classrooms of high quality which could be reused in communities later.

RESPONSE:

It is to be reiterated that the employment policies proposed by Arctic Gas for the construction phase are such that there should be no significant increase in numbers of students during the period of pipeline construction directly attributable to project-related personnel.

4. Greater efforts must be made to attract and retain teachers in northern schools. This should involve orientation for prospective teachers and wages competitive with those in the south.

RESPONSE:

This is a matter for government response.

5. Accommodation for additional teachers required as a result of pipeline development should be the responsibility of the Company. For further details, see section on "Housing".

RESPONSE:

This raises the same issues as Recommendations 2 and 3.

6. Elected school advisory committees should be established in each of the action communities in order for the local residents to have some control over the education of their children.

RESPONSE:

This is a matter for government response.

Action Communities - Health

Recommendations

Introductory paragraph and Recommendations 1 through 11.

RESPONSE:

These recommendations refer to matters which are the responsibility of government.

12. Initial treatment of persons who become sick or injured while on the pipeline should take place in the construction camps by pipeline personnel qualified under the standards of the territorial governments.

13. The use that will be made of local hospital facilities must be carefully estimated prior to pipeline construction, and measures must be taken to ensure that adequate facilities are available to meet the needs of both the pipeline and the public. If there is any conflict, public needs must be met first. It is recommended that the Pipeline Company supply transportable nursing stations for construction camps and extraordinary needs in action communi-

ties rather than have government overbuild permanent facilities.

RESPONSE:

This is consistent with Arctic Gas testimony. Specifically, Arctic Gas has stated "to ensure proper health care, a medical support system will be established to provide for the treatment of illness and injuries" (Vol. 162, p. 25067), and "furthermore, Arctic Gas would not intend to use medical facilities in the small communities" (Vol. 163, p. 25199).

14. The requirements of the pipeline project for professional medical staff must be estimated at an early stage so that any possible conflicts with normal territorial health staffing needs can be resolved. For example, environmental health inspection needs in the construction camps must be met either by having the Company employ its own sanitarians or by a cost-sharing agreement with the territorial governments.

RESPONSE:

Arctic Gas will employ its own medical and sanitation personnel. During the construction phase, these technicians can be furnished from resources in southern Canada, but if qualified northerners wish pipeline employment, we will have to respect their freedom to do so.

15. Water and sewer facilities for construction camps should be of a size and quality to enable their reuse in communities. Environmental health inspectors familiar with community needs should be involved in the design and planning of these facilities.

RESPONSE:

The water and sewer facilities in construction camps will comply with pertinent government design standards. The disposal of these camp facilities upon completion of the pipeline construction phase is discussed under recommendation #3, Housing.

Action Communities - Mental Health

With respect to the first paragraph on page 29, although the general argument in relation to the etiology of mental health problems seems correct, it is noteworthy that this discussion fails to acknowledge that mental health problems can result from having inadequate range of choices available, that in any situation where there are no alternatives to welfare, mental health problems will certainly ensue. Thus, in accord with the tone of much of the rest of this document, the discussion here emphasizes the mental health problems that might result from a pipeline development. It gives no attention at all to the mental health problems that would result in the absence of pipeline development; that is, from the economic stagnation that would heavily affect the impact area in the absence of continuing economic development adequate to absorb the energies of a growing labour force.

Recommendations

1. through 4. and 6. through 9.

RESPONSE:

These recommendations refer to matters which are the responsibility of government.

5. Immediately following the granting of a Certificate of Convenience and Necessity, the Pipeline Company should become actively involved in discussions with leaders in all action communities about how they may mutually be helpful to each other. This would also provide a forum in which each community could gain an appreciation of its own values and objectives. Industry's involvement in the past has often taken the limited form of alcoholism rehabilitation or recreation programs. However, these or other appropriate programs should only be started after full consultation with, and in conjunction with, communities and not as unsolicited handouts.

RESPONSE:

This is in complete agreement with Arctic Gas stated policy of consulting with leadership and local communities with respect to issues of this sort.

10. Preventative measures must be stressed above all else. Treatment of mental health problems is long, involved, and costly, both financially and socially. Some preventative measures are the responsibility of government and partly the responsibility of the Company, such as programs to discourage excessive numbers of transients from entering communities, and placing additional strains on community residents and services. Others are fully the responsibility of the Company and its contractors, such as removing from the north southern employees who quit or whose employment is terminated, and providing southern employees with adequate orientation to northern lifestyles and cultures.

RESPONSE:

This is entirely in accord with Arctic Gas stated policy with respect to implementing all possible ways to limit and discourage the movement of transient workers from the south into the Northwest Territories during the construction phase of the pipeline.

Action Communities - Alcohol (p. 32)

With respect to paragraph 1 on page 32, the discussion of the etiology of alcohol abuse is in accord with neither Brodie's paper entitled "Alcohol" which was Exhibit #680, or with Hobart's paper entitled "Alcohol Sales and Illegal Behaviour - a study of some communities in the Northwest Territories" which was filed with the Commission. Essentially, Brodie argued that heavy drinking must be understood among native people as either highly pleasurable behaviour--he speaks of "joyous drinking"--and/or as a kind of fellowship behaviour. In the paper mentioned above, Hobart presented data which shows that in Coppermine, Arctic Bay and Pond Inlet, there have been recent decreases in alcohol consumption although the level of wage earnings in these communities has tended to increase. Similarly, the data with respect to Inuvik and other communities fails to present any other consistent picture of relationship between employment and alcohol consumption. Both Clairmont and Smith report that in the Mackenzie Delta, it was the settlement people without continuous employment who most frequently violated the ordinance. Finally, it might be noted that there is a rather well known theory, advanced by an anthropologist, Norman Chance,

which says that the cumulative effect of more gradual change is more stressful, for the people undergoing that change, than is much more rapid change of short duration. Generally, it must be emphasized at this point, we do not have comprehensive knowledge of the etiology of alcoholism and alcohol abuse among either native or white people.

Recommendations

1. to 9.

RESPONSE:

These recommendations refer to matters which are the responsibility of government.

10. The Company must be responsible for the control of drinking and drug use within construction camps. Some means by which this might be accomplished are:

    a. Licensed premises operated within the camps must comply fully with all NWT Liquor Ordinances.

    b. Workers found taking liquor or drugs into the communities or bootlegging to local people should be fired immediately and returned to point of hire.

    c. Enforcement of drug use legislation within camps should be carried out by the R.C.M.P. and not camp security personnel.

RESPONSE:

This is consistent with the policy of Arctic Gas.

Action Communities - Social Assistance

With respect to the first sentence in the first paragraph, it should be noted that, whereas the cost of social assistance has increased very rapidly in the whole of the Northwest Territories since 1970, this increase has been at a very much lower rate in the Mackenzie Delta area than elsewhere in the Territories. The reason for this increase appears to be that the standard of living with which welfare recipients are provided is higher in recent years than it was earlier. Further, there appears no longer to be the expectation that people in need will receive assistance from friends and relatives. The second sentence is compatible with arguments that Arctic Gas has advanced, and specifically with the point Arctic Gas has made that pipeline employment and harvesting of renewable resources in the area are complementary with respect to each other. The last sentence of this paragraph argues that high welfare dependency reflects, at least in part, the fact that the land-based economy has become increasingly disrupted. A more positive explanation, consistent with very extensive data which Hobart presented in testimony, is that there has been a considerable loss of interest by natives in trapping activity since early 1960, and this loss of interest is further supported by data on the vocational preferences of native young people, which consistently fail to reflect any interest at all in trapping.

Recommendations

1, 2, and 4 through 7.

RESPONSE:

These recommendations refer to matters which are the responsibility of government.

3. Community Counselling Services should be continued throughout the pipeline construction period. In cooperation with local social development officers, the Company should undertake financial counselling to give native northerners a better understanding of money management.

RESPONSE:

This is consistent with Arctic Gas statements. For example, "Arctic Gas will also make available counselling for northern employees and their families to help them adapt to the requirements of wage employment" (Vol. 161, pp. 24820-24821).

Action Communities - Recreation (p. 38)

Recommendations

1. through 5.

RESPONSE:

These matters are for government response.

6. The Pipeline Company must accept certain responsibilities with respect to recreation:

a. During the construction phase, facilities should be provided within camps for the use of employees,

b. Use of local community facilities by pipeline workers should occur only where it is feasible and desirable from the point of view of the community. The community must in all cases be consulted.

c. Recreation facilities built by the Company should be designed with a view to their use in communities after the construction phase is over.

d. The Company should not fund large recreation complexes in the major communities, as the operation and maintenance costs of such facilities are high and may create a reliance of the community on the continued munificence of the Company.

RESPONSE:

This is generally in accord with Arctic Gas policy and plans. Re a., Arctic Gas has said, "Arctic Gas plans to provide camps that are comfortable and well maintained with a full range of high quality facilities (for housing construction workers)" (Vol. 162, p. 25067). As indicated under the heading "Terms and Conditions for Employment and Training" of this Volume, Arctic Gas subscribes to the high standards of recreational equipment and facilities as described in paragraph 65, Chapter 1, Terms and Conditions for Employment and Training (p. 55).

For 6.b., the quality of recreational facilities within construction camps is such that construction workers will have no requirement to utilize local community facilities.

6.c.; Use of construction camp recreational facilities by the communities after the construction phase is over is acceptable to Arctic Gas. The disposition of construction camp facilities and equipment is covered under Recommendation 3, Housing.

Arctic Gas agrees with 6.d.

Action Communities - Legal Systems and Institutions (p. 41)

Arctic Gas does not agree with the premise on which these recommendations are based. As indicated in its evidence to the Inquiry, Arctic Gas feels that proper planning and implementation of reasonable stipulations by government and industry will avoid the creation of the undue impacts on the action communities. In any event, these recommendations are directed at government.

Action Communities - Communications - Community Concerns (p. 43)

Recommendations

1. It is recommended that CNT should expedite extension of adequate telephone services to all communities well in advance of demands for pipeline services, so that community services are not relegated to a low priority position and thus would possibly not be available until the presence of pipeline construction and induced demands have levelled off.

RESPONSE:

Arctic Gas has advised the Inquiry that all of the communica-

tions facilities that are directly required for the project will be added to the existing communication system. Some long distance telephone facilities will be shared with the general public at specific locations where the pipeline telecommunication systems and the public telephone network are interconnected. CNT has advised Arctic Gas that services are now provided to most communities along the Mackenzie Valley with a population over 100. The extent to which CNT provides services to other settlements is a matter which CNT as a charter common carrier will determine in consultation with the appropriate regulatory agency. Arctic Gas intends to coordinate the planning of the communication requirements in the Territories with CNT (Trusty, Vol. 162, p. 25077).

2. It is recommended that, through its regulatory powers, the federal government ensure that capital costs incurred to meet the communication needs of the pipeline project and related activities are not passed on to the general public through increases in rates or by other means such as government grants or subsidies.

RESPONSE:

Arctic Gas plans do not contemplate that the general public should subsidize implementation of those portions of the telecommunication system required to meet the pipeline needs. The northern communities will benefit from the fact that Arctic Gas will be using a satellite-based telecommunication system, since spare satellite capacity could be used by the common carrier to extend telephone services to locations which are impractical, or too costly, to serve by terrestrial means.

The Commission Counsel's submission on Northern Business reflects ambivalence about the proper role which local businesses in the north should play vis-a-vis the pipeline. As a matter of policy, page 2 of the section entitled "Northern Business" states "advantage should be taken of the potential of northern regional markets for future expansion. It is therefore proposed that Territorial resident/domiciled firms should be induced to concentrate much more of their activity in areas related to the long-term growth of the Territories, and leave a greater portion of the more ephemeral, even if temporarily more lucrative, boom-induced activity largely to firms not based in the region." Despite this statement of policy, the report makes recommendations which are inconsistent with this position. For example, on page 18 of the same section, the document recommends that "the company give preference to native-controlled companies in the tendering of contracts whenever their bids are reasonably close to low bids (this might be within 10% or 15% of the low bid)." They also recommend that local carriers be given first preference over outside carriers in serving the pipeline's transportation needs and that local catering firms be given assistance to bid on pipeline camp contracts.

The inconsistency is carried a step further, however, since such preferential local procurement policies will also have the inevitable effect of inducing inflationary pressures at the local level during the construction phase. Although such inflationary pressures would flow naturally out of the recommendations in the report, the

report goes on to suggest that Arctic Gas should be required to compensate any businesses or individuals in the entire Northwest Territories affected by inflation caused by pipeline construction and related activities ("Northern Business", pages 9, 19-20). The ironic thing is that a universal regulation requiring Arctic Gas to make compensation for inflation would tend to establish a self-reinforcing inflationary spiral. Employees would demand increases and employers would not think twice about granting them, since they would be assured of recovering their increased costs. The whole economy would shift into a "cost-plus" mode.

The inconsistency of the document is understandable to some degree, since it reflects a dilemma which has faced the pipeline applicants since the Northern Pipeline Guidelines were issued in 1972. The Guidelines require the successful applicant to encourage and maximize local business participation without extending the sector beyond its capabilities, or causing local service shortfalls. This dilemma has never been adequately addressed by government, and these two aspects of regulation, which could be reviewed as mutually exclusive, have been reinforced first by the Pipeline Assessment Group report and now by the Commission Counsel's submission.

As was shown in both our application and our direct testimony, Arctic Gas sympathizes with both objectives but cannot solve the problem single-handedly. We suggest the formation of an advisory group of interested parties (ourselves, government, businessmen, etc.),

and are happy to see Commission Counsel's report supports this. We think there is room for carefully planned participation of the local business community and perhaps even some diversification into servicing of the oil and gas industry. We recognize the sensitivity of this area and accept, in fact welcome, some sort of supervision or regulation by government.

Detailed recommendations in this area must also take cognizance of Arctic Gas' need to do its job in an efficient and cost-effective manner, and any business arrangements we enter into with northern firms will reward good performance, not inefficiency. This approach is in everyone's interest.

There are some specific recommendations which we can influence directly and which we feel we can accept, although the mechanics suggested in some instances are not workable. A list of these recommendations follows:

- preference to local transport carriers;
- preference to local contractors on secondary construction providing they are cost-effective and efficient;
- advance notification of tenders within the north;
- standard procedures for tender notices in the north;
- a company-operated bid depository;
- a company-operated procurement information system;
- registration of all northern contractors to ensure notification of opportunities;

- creation of a Northern Business advisory body;
- give reasonable prior notice to northern firms on contract opportunities;
- ensure that community needs have priority over pipeline needs when it comes to any local business servicing both.

Arctic Gas cannot accept as reasonable those recommendations which call for making the company responsible for all wage and price increases in the business sector, labour market shortfalls, financing and managing northern businesses, or give preferences which will encourage inefficiency or restrict competition. In addition to the dangers and inconsistencies referred to previously, many of these recommendations are inequitable and some impractical, since they could not be made to work.

Detailed commentary on each specific recommendation, and in some cases suggested alternative provisions, follow.

Northern Business - Transportation (p. 8)

Recommendations

1. It is recommended that local carriers be given first preference over outside carriers in serving pipeline-related traffic.

RESPONSE:

The objective is fine, but the statement should be qualified with the proviso that carriers could carry out the work in an efficient

manner, recognizing the availability of manpower and equipment. In addition, normal service to the communities must be maintained.

2. It is recommended that, in cases where local carriers do not have sufficient equipment to serve both normal and pipeline-related traffic, the Pipeline Company lease the required equipment to the local carriers for whatever period is required at a cost equivalent to annual amortization. At the end of pipeline construction, the local carrier would have the option of purchasing the leased equipment at a cost equal to the remaining principal.

RESPONSE:

Any direct financial support to carriers should be provided through lending institutions or government programs, following careful review of the benefits and justification for such support on a case-by-case basis. The long-term implications for the health of the industry must also be considered before granting such support.

3. It is recommended that any contracts for the carriage of pipeline traffic include escalation clauses to ensure that the effects of material and labour inflation are passed on to the Company.

RESPONSE:

This recommendation is all right, provided that such cost escalations relate to only the work done for the Company and not all cost escalation experienced by the carrier in his total business.

Northern Business - Wholesale/Retail Trade (p. 9)

Recommendations

1. It is recommended that an impact fund be established under the Authority and financed by the Company to compensate local firms for inflation induced by the pipeline (e.g. labour, transport, etc.). This fund should be used to offset the effects of cost-push inflation on the pricing of normal community supply.

RESPONSE:

The Arctic Gas response to this recommendation is covered under "Action Communities - Impact Funding".

2. It is recommended that the government take a more active role in encouraging local firms to concentrate on normal trade. Assistance by government must be provided in the areas of financing and management techniques both during and after pipeline construction. Government assistance must be available only to regionally domiciled firms, and to new or existing local firms that are expanding or developing normal trade. The financial assistance would be in the form of providing low cost loans, recompensing local firms for excessive inventory costs, and providing lump sum grants to assist in the construction of new facilities.

RESPONSE:

This is a matter for government response.

Northern Business - Construction Industry (p. 10)

Recommendations

1. It is recommended that local construction firms be given first right of refusal on any secondary construction which is the responsibility of the Company.

RESPONSE:

Arctic Gas considers this acceptable if companies are capable of handling the job required at an acceptable price and if, by so doing, their capacity to serve normal community needs is not impaired. We would have to agree on a precise definition of secondary construction.

3. It is recommended that all contracts be on a cost-plus basis.

RESPONSE:

Arctic Gas believes that it would be inappropriate to conclude that all contracts be on a cost-plus basis. In principle, cost-plus contracts provide little incentive for contractors to perform efficiently. It is conceivable that there will be certain discrete work packages which will be within the capacities of a number of northern contractors. In these circumstances, it may be appropriate to develop contracts on a fixed price basis. In other situations, it may be appropriate to include incentive arrangements of some type in cost plus contracts.

4. It is recommended that, if a project is beyond the capacity of any individual contractors, the Company should, by providing project managers, enable regional contractors a greater opportunity to compete. These project managers would assist in assembling consortia of local firms to undertake a particular project.

RESPONSE:

This is very difficult to do from a liability point of view. Such consortia members must be joint-and-severally liable for work performed, which may not be good or acceptable. It should be left up to northern firms to form consortia on their own (recognizing liabilities). Arctic Gas could not provide managers to northern businesses which were involved in contract work for us, since it would lead to conflicts of interest.

5. It is recommended that, in situations where local contractors are deficient in necessary equipment, the Company undertake the role of broker in making leasing arrangements. The cost to the local contractor should be no higher than if it were a southern firm.

RESPONSE:

This again seems to make Arctic Gas responsible for general deficiencies, rather than only those deficiencies related to our requirements. The concept of providing equipment if not readily available to successful bidders on "cost plus" contracts seems to be acceptable, although recommendation #2 under "Availability of Loan Capital" must also be given consideration (i.e. government support may be more effective over the long term). The full implications of the last sentence are not clear, but the company should provide the same equipment supply arrangements for either northern or southern firms.

6. It is recommended that the government should assume the Company's responsibilities in respect to local contractors in the period

following pipeline construction. That is, local contractors would be given first refusal on any government sponsored project. Other provisions outlined here could also be applied.

RESPONSE:

This is a matter for government response.

8. It is recommended that a special office funded by the Company be established to administer this bid depository throughout the Greater Pipeline Impact Region.

RESPONSE:

The special office should be an Arctic Gas office, which handles only pipeline project contract opportunities.

9. It is recommended that any "information systems" installed in connection with programs such as the proposed Manpower Delivery System be used to transmit information concerning tenders and bids and that use of such facilities be made available to regional contractors at no charge.

RESPONSE:

Arctic Gas will handle all communications (tenders, bids, etc.) directly with all approved contractors and suppliers.

10. It is recommended that all territorial resident/domiciled contractors of the Greater Pipeline Impact Region be registered with the

bid depository to ensure that all are made aware of available opportunities.

RESPONSE:

We agree.

Northern Business - Availability of Loan Capital (p. 12)

All recommendations in this section refer to matters which are the responsibility of government.

Northern Business - Bonding (p. 14)

Recommendations

1. It is recommended that bonding be made available in whatever amounts are required to enable local firms to take advantage of business opportunities arising out of secondary and tertiary activities induced by the pipeline, especially opportunities that would enhance the long term growth of the region and the particular firm.

RESPONSE:

This is fine provided bonding is provided with government support.

2. It is recommended that when firms make it a practice to expand by drawing down their working capital reserves, they should not be able to avail themselves of special bonding provisions.

RESPONSE:

This is good business practice for the year(s) in which capital drawdown is done, but there seems to be no such limit in the recommendation.

Northern Business - Regulation of Business (p. 15)

Recommendations

1. It is recommended that a permanent body be established, composed of representatives from the petroleum industry, the Chamber of Commerce and territorial governments to monitor the evolving business relationship between northern firms and the pipeline. This committee would have as principal, immediate roles the dissemination of information to regional firms, the setting of quotas for various types of goods or services that such firms might supply to the pipeline, and resolving problems encountered by regional business as a result of the pipeline.

RESPONSE:

The Committee should only advise or make recommendations, not "set quotas" on business and "resolve problems".

2. It is recommended that, as a further responsibility, this committee should advise government on long term planning for the orderly expansion of northern business. Membership in the permanent body might also include the regional business advisory agency previously mentioned.

RESPONSE:

We agree with the principle.

Northern Business - Government Programs and Incentives (p. 16)

Recommendations

1. It is recommended that a financial agency be established to compensate for the fact that the Greater Pipeline Impact Region lacks many of the advantages of southern regions, in which financial institutions are well represented and able to cater to various needs. Until significant growth has taken place in the north, such facilities will not appear there and government should therefore play a role in providing a range of financial services to northern businesses. This agency should concentrate on serving the same kinds of functions as financial institutions in the south. Another role should be the promotion of the growth of financial institutions in the northern territories. Ideally it would at some point put itself out of business when the regional economy had developed to the point where private industry found it attractive to establish the same service. In effect, this proposal amounts to the creation of a government insurance and loan scheme, not too dissimilar in concept from government health, automobile or other insurance schemes.

RESPONSE:

This matter is the responsibility of government. However, this should be tied in to the bonding and special loan recommendations.

2. It is recommended that a development corporation (such as exists in many of the provinces) be established for the Greater Pipeline Impact Region. The corporation should have a board of directors, consisting of government personnel and business people who have firms headquartered in the North. It is further recommended that the corporation, at the discretion of the board, provide low interest investment or operating capital to firms establishing or having headquarters in the region. Unless the native people wished this, the development corporation would not have any jurisdiction in areas encompassed by a land settlement. Such areas would presumably have their own development institutions which would decide on the degree to which they wished to use the services at the development corporation.

RESPONSE:

The objective is good as long as it avoids overlap with existing programs and services and encourages efficiency.

3. It is recommended that the corporation provide assistance to established firms now serving the "normal market" and to new firms intending to serve the same market.

RESPONSE:

We agree with the principle.

4. It is recommended that financial assistance provided by the corporation include loans to individuals or resident groups in the

Greater Pipeline Impact Region who wish to acquire an ongoing business operation which is controlled by outside interests.

RESPONSE:

No comment.

5. It is recommended that new or existing businesses be given government assistance in procuring adequate management expertise. It is suggested that government directly hire management personnel or provide funds to firms for hiring managers. The outside management personnel could be double staffed with the resident owner and operator for a period of from 3 to 5 years. In this way management expertise could be developed through on-the-job experience.

RESPONSE:

This recommendation appears to be desirable, provided businesses have full discretion in recruiting, hiring and firing management.

6. It is recommended that a protion of business development loans to regionally headquartered firms be forgiven in some relation to the number of permanent jobs provided to territorial residents.

RESPONSE:

There could be a conflict of objectives here. Business development programs should encourage efficiency and productivity. If business development loans are to be forgiven, it should be for good business performance. If government decides that there should be job creation incentives, a program specifically designed to do that should be established.

prior to the time when such work is to be undertaken. The list of contract work to be tendered should include specifications in sufficient detail as to allow the native corporations to assess the feasibility of bidding. Sufficient time should be allowed between the award of the contract and the date on which the project is to commence to allow for personnel recruitment and company organization.

RESPONSE:

We are prepared to advise native organizations of our construction plans one to two years in advance and, in fact, to keep them properly updated up to the time of tender request. We also support the idea of issuing tenders to native organizations at least one week in advance of issuing tender requests to others (see No. 2 on page 10). However, the wording of the last two sentences of this recommendation is unacceptable because of the physical impossibility of complying with these requirements in all cases. We will supply as much lead time as possible.

3. It is recommended that the same preference in awarding contracts be given to any joint bids with either local or southern firms when a native company is a significant partner in the joint venture.

RESPONSE:

This is creating a loophole against previous objectives. Joint ventures with normal southern businesses should stand on their own feet, otherwise the provision will be misused and lead to joint ventures

for southern convenience only.

Northern Business - Commercial Services (p. 19)

Recommendations

1. It is recommended that the territorial governments or the Authority set up a program to liaise with the major catering firms in the Greater Pipeline Impact Region communities to encourage them to develop methods of cooperative operation and at the appropriate time to assist them to bid jointly on pipeline camp supply contracts.

RESPONSE:

Acceptable, provided joint-and-several liability is recognized (see recommendation #4 under "Construction Industry"). It also must be clearly understood that only firms capable of providing this very critical service in the manner required will be used by Arctic Gas.

2. It is recommended that when a pipeline construction permit has been granted, the Company be made responsible for ensuring that sufficient eating, recreation and accommodation facilities are available in selected communities (the "action" communities discussed in another section) to meet their own direct requirements plus the indirect requirements of transients. To the extent compatible with the long term needs of the region, the existing industry should be actively encouraged to provide the required facilities. The coordination of this effort should be the responsibility of the Authority working in cooperation with the territorial governments.

RESPONSE:

The indirect requirements of transients should not be Arctic Gas' responsibility, and as stated previously, we do not agree that the creation of the Authority is necessary to take on the responsibilities of the territorial governments.

3. It is recommended that a "wage increase compensation fund" be established under the Authority into which payments are made by the pipeline Company. This fund would be used to compensate existing firms in the commercial sector for unjust and extreme pipeline induced increases in wage rates and labour turnover during and immediately after the construction period.

RESPONSE:

Refer to our general comments at the beginning of the Northern Business chapter and to our position on Impact Funding in the Action Communities chapter.

4. It is recommended that a special ameliorative program be set up under the Authority for critical cases of temporary labour shortage experienced by existing business because of pipeline construction. This program could take the form of a special labour pool which would be recruited from outside the territory and maintained by the Company during the construction period. Appropriate personnel from this pool would be made available at predetermined wage rates to existing employers who could demonstrate that they were unable to replace workers leaving for direct pipeline jobs.

RESPONSE:

This is not practical. The only practical approach is to: (1) allow labour/manpower to find its own level; or (2) prevent northerners from working for the pipeline; or (3) provide loans to businesses which must recruit personnel (as suggested in previous recommendations). As indicated, there is no need for the Authority; this is part of government's normal economic planning responsibility.

TERMS AND CONDITIONS OF EMPLOYMENT AND TRAINING

Introduction

Arctic Gas has the following comments on the general principles and observations contained in the Introduction.

1. As indicated by the Arctic Gas witnesses to the Inquiry, Arctic Gas supports the Inquiry staff's recommendation with respect to the establishment of a Northern Manpower Delivery System (NMDS) for the construction phase and for the utilization of a preferential access and support system which will ensure the training, employment and retention of northerners. Arctic Gas shares the view that all parties concerned be involved from the beginning.

2. On page 7 of the chapter on "Basic Issues", the Inquiry staff indicated that it does not favour the extension of any bureaucratic power beyond levels absolutely necessary to deal effectively with the project. It is Arctic Gas' submission that the staff proposal could become too bureaucratical with as many people being employed keeping records, monitoring the activities at both the community level and work locations as there will be people wishing employment on the project. As will be indicated in the comments below, Arctic Gas feels that the agreed-upon objective of full employment for northern

residents can be obtained by having the NMDS prepare and file with the contractors and unions, personal histories of all potential hirees indicating their qualifications and the construction jobs and/or training positions which they are interested in. This would avoid the very cumbersome and duplicative process recommended by the Inquiry staff that all employees including owners and contractors, and the unions involved, must advise the NMDS of all job openings with the NMDS in turn, being required to respond to each such advice.

3. As will be more specifically illustrated in the comments below, Arctic Gas feels that it is impractical and premature to recommend specific mechanics for the NMDS. In co-operation with government, Arctic Gas and participant companies have acquired expertise in the development and implementation of recruitment, employment and training procedures. This should form a basis for discussion and development of procedures tailor-made for the construction phase by all legitimate interested parties. What is important is that there is general agreement on the principles of the establishment of the NMDS.

COVERAGE CLAUSES

It should be stated at the outset that all of the Coverage Clauses should not in fact be included in a right-of-way agreement. Instead, it is proposed that the right-of-way agreement require a pipeline company to participate in the NMDS.

Clause 1 (p.5)

> "These terms and conditions shall apply to construction of a gas pipeline, compressor stations, gas plants, support and other pipeline project related ancillary facilities, and to exploration, development and production, operations and maintenance of a natural gas industry and transportation system. This coverage is hereinafter referred to as The Project."

RESPONSE:

Arctic Gas agrees with the Staff's recommendation that the NMDS be applicable to the natural gas industry operating in the vicinity of the pipeline. Arctic Gas does not agree with the Inquiry Staff's suggestions that the NMDS would be applicable to the operations and maintenance phase of the pipeline. Arctic Gas submits that the NMDS is necessary during the construction period only. Arctic Gas believes it should be an integral part of the plan to phase it out on a pre-determined basis, with existing employment agencies of government taking over it's operations in the post construction period.

Clause 3 (p.7)

"These terms and conditions shall be applied to the Gas Industry and Pipeline System in the Mackenzie Valley for the entire life of the Industry in the Region."

RESPONSE:

See comments with respect to Clause 1 which includes Arctic Gas' view on the duration of the NMDS and the return of responsibility to existing agencies as soon as possible after the construction phase is completed or its activities are significantly reduced.

Clause 7 (p.9)

"No union shall accept an application for membership or dispatch any person to a project job who is physically present in the Northwest Territories, unless that person has been cleared by the Northern Manpower Delivery Service."

RESPONSE:

Arctic Gas endorses the concept inherent in this Clause in order to assist in preventing the influx of southerners into the North seeking employment.

Clause 10 (p.11)

"The Northern Employment and Training preference system shall be administered and monitored by the Northern Manpower Delivery System. Compliance and enforcement of any provisions shall be vested with appropriate government authority overseeing the project terms and conditions.

RESPONSE:

This Clause raises the question of the identity of the appropriate government authority to enforce these terms and conditions. Arctic Gas takes the position that the terms and conditions established for an NMDS will be administered by the Territorial Governments and not by a Manpower Delivery System Policy Board as proposed by the Staff Report in Clause 20. Consequently we have assumed for the balance of this analysis that every function given to the NMDS Policy Board by the Staff Report will be carried out by the Territorial Governments.

Clause 13 (p.12) and
Clause 14 (p.13)

13. "The Union shall be required to show sufficient cause to the Authority why the permanent northern resident referred to it by the NMDS was rejected. If the Union fails to show sufficient cause, it shall be required to pay:

a) The amount of money the rejected person would have earned at the refused position from the date of the refusal to the date that person is dispatched by the Union, or;

b) The amount of money the rejected person would have earned at the position refused for one complete tour of employment,

whichever is the lesser.

14. If the Contractor refuses to accept a permanent northern

resident dispatched by a Union, the Contractor shall be required to show sufficient cause why that person was rejected. If the Contractor fails to show sufficient cause, it shall be required to pay:

a) The amount of money the rejected person would have earned at the refused position from the date of the refusal to the date that person is accepted by the contractor, or;

b) The amount of money the rejected person would have earned at the refused position for one complete tour of employment,

whichever is the lesser.

For the purpose of 13 a) and 14 a), if the person is hired or dispatched at a rate of pay less than the rate of pay for the position refused by the Union or Company, as the case may be, the Union or the Company shall pay the difference in the two rates calculated for one full term. Such payment is in addition to the amounts set out in 13 a) and 14 a)."

RESPONSE:

Arctic Gas submits that the inclusion of these Clauses is not necessary if the NMDS mechanisms permit pre-agreement of all parties as to the suitability of residents for specific types of employment. With respect to the penalties described in paragraphs a) and b) in both Clauses, it is submitted that the actual mechanics of enforcement should be worked out by the Territorial Governments. The Clauses as proposed

do not contemplate the situation where the refused person fails to take a job subsequently offered to him. Also the penalties proposed do not clearly state that they would be payable to the northern resident who has been refused or that penalties would be mitigated if the rejected person takes a job outside the NMDS during the periods of time specified.

Clause 15 (p.14)

> "The NMDS shall refer all qualified northern residents to appropriate Unions. These northern residents shall be listed with the Unions and shall be preferred for dispatch by the Unions. Northern residents shall be dispatched by the Unions if:
>
> a) The NMDS has not referred a permanent northern resident for dispatch, or;
>
> b) The Union has rejected the permanent northern resident referred by the NMDS."

RESPONSE:

Arctic Gas is of the view that there may be a number of peripheral jobs such as right-of-way clearing or the provision of similar services which could be performed for the company and its contractors by individuals or by community groups. As has been the case historically, Arctic Gas contends that it would be in everyone's interest to continue to negotiate such arrangements directly between the parties.

Clause 19h(p.16)

" To prescribe the pre-employment training necessary to meet the skill deficiencies of its clients and to be responsible to ensure the initiation of such training by the owners."

RESPONSE:

Arctic Gas disagrees that the owner be responsible for initiating pre-employment training when deemed necessary.

Pre-employment training traditionally involves attendance at education institutions to raise educational levels in such things as mathematics to minimum standards required for skill training on the job. The NMDS can prescribe this only if it assures itself of having personnel who know the jobs for which the pre-employment training is being prescribed.

Clauses 20-23 (p.19)

20. "There shall be a Northern Manpower Delivery System Policy Board which functions like a Board of Directors. The Policy Board shall be composed of representatives of the following groups:
Native organizations, Unions, Owners of Contractors, and Government agencies. Its job will be as follows:

a) To set overall policy

b) To provide direction to an executive committee."

RESPONSE:

Arctic Gas has assumed that the word "of" in the fifth line of the Clause should be "and". As indicated in the comment on Clause 10, Arctic Gas does not feel that it is necessary to establish the Policy Board since effective input from the various interest sectors could be made through the Territorial Governments.

Clauses 28, 29, 30, 31 (p.23)

RESPONSE:

The conditions set out in these Clauses are too inflexible and should be removed with such matters to be determined by the Territorial Governments in light of conditions existing at the time closer to the commencement of construction.

The comments on page 23 suggest that a lead time of two years would be required to establish the NMDS. Keeping in mind that an elaborate organization is not required, Arctic Gas feels that a proper environment for cooperation will exist between unions, governments, owners and contractors to establish the NMDS in a period of not more than six months. Further, Arctic Gas strongly contends that the most important preconstruction step to be taken is the development of a record of all potential hirees to be matched against the jobs which will be available in construction. See comment under Introduction in Point 2.

Clause 35 (p.30)

"The NMDS shall establish an extensive information program at the community level. This program shall detail the pipeline employment and training opportunities to be made available to the Permanent Northern Resident."

RESPONSE:

Arctic Gas has assumed that this Clause would also require the dissemination of information on opportunities in gas plants, exploration and development work.

Clause 36 (p.33)

"The NMDS community representative shall be the person responsible to take the application of a Permanent Northern Resident for project employment or training."

RESPONSE:

Arctic Gas agrees with the concept implicit in this Clause but suggests that there should be flexibility in the requirement that there be an NMDS community representative in each community. For example, it is our view that one person could probably serve Norman Wells, Fort Franklin, and Fort Norman and another person could serve Jean Marie River, Trout Lake, Nahanni Butte, and Ft. Liard. The decision on whether a particular community should have a community representative should be made based on the anticipated number of clients in that community. As stated earlier the compilation of this data prior to construction is most important.

Clause 37 (p. 34)

"The NMDS shall assume responsibility for preliminary assessment of skills and experience of individuals seeking entry into training and employment associated with the project. This assessment would consist of:

a) Evaluation of Applicants' experience and referral to appropriate training, level of apprenticeship or to journeyman level for project employment.

b) Prescription of up-grading or training programmes for individuals seeking entry into or progression within a trade."

RESPONSE:

Arctic Gas feels that this Clause should be modified to permit testing done by the contractor, or by the unions, where such testing can be carried out more efficiently. In particular fields such as heavy equipment operations, welding, etc., the best skill test is a field test administered by the contractor or by the unions. Skill assessment by NMDS may be more effective in the trade areas such as electricians, pipe fitters, carpenters, etc., but even this should not be predetermined. Arctic Gas believes that development of procedures and provision of facilities for skills training are best determined by those utilizing such skills.

Clause 39 (p.36)

"The NMDS shall establish a centrally located office in the North (presumably in Yellowknife) and shall have at least one officer or representative in each of the communities designated to be served by NMDS."

RESPONSE:

As indicated in its comment on Clause 36 above, it is Arctic Gas' view that one individual can serve three or four small communities.

Clause 40 (p.36)

"Where feasible, a telex system shall be installed, connecting each community in which the NMDS operates; the central office of the NMDS, all training institutions in the North, all construction camps, all union hiring halls in the South, the administrative office of the owner, the administrative offices of the contractors."

RESPONSE:

Arctic Gas submits that the suggested use of a telex system may not be the best system for communication. Satellite telecommunications may be more feasible and efficient. The Clause should not be specific on the mode of communication other than to indicate that the system to be chosen should be efficient.

Clauses 44 and 45 (p.38)

44. "Costs of operation and administration of the NMDS shall be borne by all users of the service (i.e., Owner of the pipeline and owner of all plants), in proportion to their respective degree of utilization.

45. Financial administration of the NMDS shall be assigned to the appropriate government authority established to oversee compliance with all terms and conditions."

RESPONSE:

Arctic Gas submits that the cost of the operation and administration of the NMDS should be paid by government (see Comments under heading "Action Communities - Import Funding")

Clause 46 (p.39)

"One year before construction begins, the NMDS in co-operation with owners, contractors and unions shall assure that pre-employment institutional training programmes are initiated to facilitate placement of permanent northern residents into on the job training (OJT) and employment positions at the commencement of construction. The nature, location and number of positions in such training programmes shall be decided with due consideration to the following factors:

a) Emphasis should be placed on acquisition of skills for apprenticeship trades;

b) Priority placement should be on skill acquisition matched to long term skilled labour requirements in the region;

c) Ability of existing institutions to absorb trainees destined for project related OJT and employment;

d) Ability of owners and government to sponsor such programmes;

e) The size of project work force requirements for first year apprentices or helper categories."

RESPONSE:

Pre-employment training should be instituted with the correct lead times so that persons will be able to enter directly into the labour force. The amount of lead time will vary depending on the skills required for the particular trade or position. It should be noted that in the year preceding construction, certain activities such as site clearing, initial surveying and preliminary building of wharves and staging sites will all be taking place and thus it may be difficult to attract persons into construction pre-employment training programs.

At page 40 it is suggested that the primary responsibility for carrying out training programmes should fall on the owners. It is submitted that this kind of pre-employment training should be the responsibility of government. Industry should have responsibility for the provision of training-on-the-job and the provision of apprenticeship positions.

Clause 47 e) (p. 41)

"Three months before construction begins, the owner and each union shall file a joint plan of procedure with the responsible government authority, setting out the following:

e) A procedure for regular periodic assessment and evaluation of the progress of the trainee or apprentice on the job leading to job journeyman status."

RESPONSE:

Arctic Gas submits that no special procedures are necessary since periodic assessment and evaluation of apprentices should be part of normal procedures.

Clause 50 (p. 42)

"No union shall dispatch persons to employment or on-the-job training or apprenticeship positions and no contractors shall commence project construction work until a joint plan of procedure for employment and training of permanent northern residents and northern residents has been submitted by the owner and union and approved by the responsible government authority through the NMDS."

RESPONSE:

A joint plan of procedures for employment and training by unions and contractors is unnecessary. The preferential access system will ensure that northerners have first opportunity for all available jobs for which they are qualified or can become qualified to fill in the time frame avail-

able. Once in these positions, normal procedures followed by unions and contractors will look after the interests of all the workmen, native and non-native alike. The concepts outlined in Clause 50 are in accord with Arctic Gas' philosophy but are unnecessarily elaborate.

Clause 51 (p. 45)

"The owners shall be responsible for the acquisition of any support services necessary to sustain or equip northern residents destined for project training or employment. Such support services could include:

a) Transportation, accommodation and related expenditures for persons in transit to project training or employment;

b) Allowances for trainees placed in educational institutions;

c) Counselling services not otherwise provided by existing government agencies, contractors or NMDS;

d) Tools, equipment and clothing necessary to performance of training or jobs associated with the project."

a) and c)

RESPONSE:

Arctic Gas submits that existing government transportation programs such as the Manpower Mobility and Employee Relocation Program should be utilized to the extent practical with any additional expenses being borne by the owners.

b) and d)

RESPONSE:

Arctic Gas submits that these expenses should not be the responsibilities of the owners since allowances for trainees placed in educational institutions should continue to be a part of existing government programs. Funds for certain tools, equipment and clothing which are necessary for the trainees, should be advanced to them with such funds being reimbursed through payroll deduction.

Clause 52 (p. 45)

> "The owners shall be responsible for the costs of such support services where these services are directly associated with the project on-the-job training or employment and where the costs of such services are not otherwise borne by government agencies as part of the latter's normal programmes."

RESPONSE:

Portions of this Clause appear to be contradictory to provisions of Clause 51 in that they state that the owner should be responsible for costs "not otherwise borne by Government agencies as part of the latter's normal programs". It is submitted that training allowances and training transportation and accommodation are clearly part of the normal government programs at the present time and should continue to be so during the construction period.

Clause 53 (p. 47)

"The owners and unions shall be required to provide the NMDS with all data pertinent to the monitoring of these training and employment terms and conditions. Reports and data would be required (bi-monthly, each construction season, monthly, etc.) and should consist of the following:

a) Names of persons dispatched categorized by:

i) Permanent Northern Residents

ii) Northern Residents

iii) Other

b) The nature, type, and classification of each Northern Resident referred with supporting information on the entry skill levels of each.

c) Progress and achievement of each Northern Resident in OJT, apprenticeship or other project related training.

d) Duration of employment of each Northern Resident.

e) Any other information required by the NMDS."

RESPONSE:

It is submitted that the timing for the filing of reports and data should be at reasonable intervals and not more often than on a monthly basis; however, the timing and scope of the data to be reported should be determined by the Territorial Governments.

Clauses 55 to 58 (p.48)

55. "An employment advisory and counselling program should be established by the owner through the contractor to provide support and assistance primarily to native workers in the construction camps.

56. Each construction camp should have an employment advisor (counsellor) who would be responsible for on the job counselling, advice on career development, liaison and assistance to the employer, the union, or the worker in regard to communication or other problems on the job.

57. To the maximum extent possible, employment advisors retained by the contractor for these functions should be native people particularly in situations where a large native work force is present in the camp. Also these people should be professionally trained to the maximum extent possible and/or provided with training to enable them to perform their function. Such training should include exposure to the construction industry and/or knowledge of the construction industry.

58. The camp employment advisor should be responsible for the administration of all records pertaining to the function of his job. Such records should be available to Northern Manpower Delivery System personnel, as part of the latter Agency's ongoing responsibility for monitoring performance with terms and conditions."

RESPONSE:

Arctic Gas supports the Staff's recommendation on the use of an Employment Advisor. With respect to the functions outlined on page 50, Arctic Gas submits than an additional function should be that of coordinating training for employees in certain situations at the end of the construction season if the work in which they are engaged is seasonal.

Keeping in mind that there could be some construction camps with a small number of employees, Arctic Gas feels that the requirement to have an employment advisor in each construction camp should apply to each major construction camp only.

Clauses 59 to 62 (p.52)

59. "Consideration should be given to the establishment of a simulated construction camp at or near Fort Smith or alternatively as a location which would later be utilized for construction activity for the pipeline. The construction camp simulation would be for the purpose of training and orienting northern workers prior to employment in pipeline construction.

60. Consultation with the owner and selected construction contractors should be undertaken prior to the establishment of such a construction camp simulation. Consultations should consider the location, nature, size and curriculum of a camp.

61. The owner through the project contractors should be responsible for the conduct and costs of this program.

62. The camp could be operated jointly by the unions and the contractors with the unions supplying the instruction and the contractors supplying the necessary equipment."

RESPONSE:

Arctic Gas discussions with industry and unions suggest that it is not necessary to establish a simulated construction camp. Long standing experience in the industry confirms that the best training is the actual training on-the-job experiences with the employee trainee participating in the actual construction program. Examples of this are heavy equipment operating and welding where the long training time necessary in actual job exposure cannot be simulated.

Clauses 63 to 66 (pp. 54-55)

63. "The practice of the construction industry on a project of this kind appears to be such that provision of suitable camp and recreation facilities will lead to a reduction in general labour attrition in camps where labour attrition problems are associated with lack of recreational facilities. Therefore, the owner and his contractors will be expected to conform to the industry norm in regard to the provision of superior accommodation and recreational facilities. An acceptable standard seems to be provision of the following:

a) Large, bright, clean rooms, designed for singles or couples;

b) Accommodation for couples in a separate section of the camp facility;

c) Rooms to be equipped with outlets for radio, plug-ins;

d) Rooms to be equipped with proper locks or security, etc., etc., so that an occupant's belongings are safe and secure;

e) Ample and modern shower, washroom and toilet facilities;

f) Provision for adequate laundry facilities for personel use; and

g) Provision of separate accommodation and washroom facilities for women.

64. The owner and his contractors should be required to make adequate provision for food preferences of the native person in the construction camp. This would include provision of "country foods".

65. The owner and his contractors should be required to provide adequate recreational facilities and also adequate programs for recreation for workers in the camp. This could include the following:

a) Television facilities;

b) Movies;

c) Library services and reading room;

d) Participant supervised card rooms for playing poker, etc;

e) Games room with such facilities as shuffleboard, ping pong, pool tables, etc;

f) Facility for the controlled use of alcohol;

g) Periodic entertainment programs;

h) Possible provision for other sports activities (cross country skiing, etc.) and self improvement programs (crafts, public speaking, culture appreciation, etc.).

66. The owner shall provide the necessary authorities with complete co-operation in regard to policing and security aspects of the project and its impacts. This shall include the following:

a) Complete access at construction sites to police authorities;

b) Commitments to use such police authorities in all matters outside normal guard entry and exit security;

c) Complete exchange of information to the authorities with respect to the discharge of undesirable persons from the project;

d) Provision of adequate information to authorities regarding possible illegal acts anticipated or taking place within the construction areas; and

e) The implementation of adequate education programs for security staff which will ensure that such staff are aware of their own responsibilities in relationship to that of other authorities."

RESPONSE:

As Arctic Gas has told the Inquiry, it recognizes that it, and its contractors, must provide superior, fully integrated accommodation and recreational facilities in order to hold employees. Again, the standards set out in these Clauses should not have application to small construction camps, but only to the major camps.

Clause 65 suggests that television facilities should be provided to the camps. Arctic Gas has been advised that Telesat has been developing a television service for the frontier areas where the camps will be located. It is expected that the decision on the implementation of this service will be made at a later date.

Clause 72 (p.61)

"Safety instruction in training and orientation programs should be conducted in the respective native languages where native employees are present on a project, and where such native workers have no knowledge of the English language."

RESPONSE:

Arctic Gas is prepared to ensure that safety instruction should be provided in the respective native languages.

REGIONAL STABILITY AND GROWTH

This section of the Commission Counsel's Submission contains discussions of many issues which have been dealt with in previous sections of the socio-economic chapter. Not in all cases where such repetition occurs is the analysis or the recommendation that results consistent. The Arctic Gas positions on the following three issues have been dealt with in responses to earlier recommendations and are not repeated:

- Evolution of local government among northerners. (See "Action Communities - Organization of Local Government")

- Subsidization of wage levels and prices and indexing of incomes. (See "Basic Issues", "Native Society" and "Northern Business")

In addition, there is some analysis followed by six recommendations which deal with potential future oil and gas developments in the Beaufort-Delta region. Arctic Gas is not involved in exploration and development, and therefore feels it inappropriate to comment on these recommendations.

The sections that deal with regional economic planning and the phasing of various projects are most properly the purview of the govern-

ments involved, and we understand from the testimony of Mr. Yates and Mr. Elkin that mechanisms are already in place to cope with rapid development from this point of view.

A major portion of the stability and growth section of the submission deals with the regional transport sector and transportation infrastructure. Since Arctic Gas will be a heavy user of transportation services and communication services, we would like to comment on these recommendations in detail as follows.

Regional Stability and Growth - Regional Transport Infrastructure (p. 21)

Recommendations

1. to 6.

RESPONSE:

Inasmuch as Arctic Gas will depend primarily on its own wharves and airfields, joint use of existing wharves and airfields presents no significant problem. The provision in the recommendations that would require the Company to purchase the jointly used facilities from the present owner should be reconsidered, since this proposal may work against the best interests of the present owner and the local community. Instead, the recommendation should be modified to provide for a negotiated arrangement between Arctic Gas and the owner of the facility for its joint utilization. In every case, the joint utilization agreement should recognize and provide for full satisfaction of local community support requirements over those of the pipeline and should provide for equitable and reasonable remuneration and maintenance by the company.

Regional Stability and Growth - Additions to Transport Fleets (p. 23)

Recommendations

1. It is recommended that Northern Transportation Company be responsible for all water transport needs of the applicant. N.T.C.L. can then subcontract to other water carriers.

RESPONSE:

Arctic Gas is concerned that this may not be in the long-term interests of northerners. Competition in water transport would provide long-term benefits to northerners and northern development. Arctic Gas needs a competitive situation as well in order to ensure the project is built in the most cost-effective manner.

2. It is recommended that additions to the tug and barge fleet required for pipeline construction be amortized over the life of the construction period, with no provision for salvage value.

3. It is recommended that the Company be assessed the full cost of the amortization either as a lump sum payment to the water carrier or as a surcharge on tariffs applied to its traffic.

RESPONSE:

Arctic Gas recognizes and accepts the responsibility for the provision of dedicated barge and tug sets to meet the requirements of our project. There are several options open to us, and although the precise arrangments are yet to be negotiated with the various operators,

the one which we favour and have used to make our cost projections is described here.

Arctic Gas is prepared to backstop the investment which northern carriers are required to make in order to meet the needs of our project. Our initial analysis suggests that new equipment so acquired should be depreciated over a 15-year period. During the life of our project, operators will be able to recover some of their investment, including financing charges and depreciation through the tariff they charge us. However, the amount of river traffic is projected in studies by Transport Canada to grow at about a 9% annual rate once a pipeline is completed and as the new and improved fleet is needed to meet increased requirements the financial responsibility, including financing charges and depreciation, would pass on to other users of the equipment. If growth in river traffic does not require full utilization of the equipment, then we would be responsible for any financial consequences. It must be remembered that much of the equipment operating on the river today is old and inefficient, and some operators may wish, as part of their initial agreement with us, to negotiate for using equipment acquired for our project to replace part of their existing fleet once our project is completed. We feel these arrangements will reinforce the long-term viability of Mackenzie barge operations and thus prove to be in the best interests of the northern communities and businesses which these operations serve, while at the same time meeting our requirements.

Regional Stability and Growth - Pricing of Transport Services (p. 24)

Recommendations

1. It is recommended that a freeze on rates applicable to normal resupply and passenger traffic should be instituted before pipeline construction begins. A date such as the issuance of a Certificate of Convenience and Necessity could mark the beginning of the freeze.

RESPONSE:

This recommendation is not practical. Barge companies are currently operating with significant losses due to a lack of activity in the north. If this approach is taken, the reference point must reflect a profitable "tariff base" and must allow for normal escalation due to inflation.

2. It is recommended that any additional costs that carriers incur because of the pipeline and related projects should be considered as the responsibility of the Pipeline Company. The recovery of the additional costs must in no way be built into user charges on normal traffic.

RESPONSE:

Service contracts between Arctic Gas and barge operators will undoubtedly provide that the barge operators be reimbursed for cost escalation related to the portion of their investment/operation dedicated to Arctic Gas. Other major users should also have similar contracts or tariffs. Special compensation to northerners to offset any such increases should be

provided, if necessary, from government tax revenues, as discussed under the heading "Impact Funding".

4. It is recommended that the rate freeze should be reviewed after construction is completed. Any subsequent rate increases must be predicated on general rate increases for southern Canada. No "catch-up" in rates that would reflect increases that had taken place while the pipeline was under construction should be allowed.

RESPONSE:

It will obviously be the transportation company(s) that must "swallow" this cost, and is therefore an extremely short-sighted recommendation which would not enable their charges to inflation in accordance with a normal growth economy--they may be forced out of business at the ultimate expense of the northern residents.

5. It is recommended that the Company should provide long-term funding for post-construction carrier operating losses due to lasting pipeline induced cost inflation.

RESPONSE:

This is an unacceptable recommendation. The objective of this is eliminated if the more practical approach suggested by us in No. 2 and 3, "Additions to Transport Fleets", were implemented.

Stability and Growth - Communications - Construction Phase Demands (p. 26)

While it is too early to expect Arctic Gas to have specifically defined its requirements for communications services, Arctic Gas has recognized the need to have its communication requirements defined at the earliest possible time. To this end Arctic Gas is undertaking engineering design agreements with Telesat Canada and the other common carriers along the pipeline route, including CNT. These agreements require Arctic Gas to keep the communications firms informed on the latest construction communication requirements in order that they may carry out their long-range planning in accordance with their responsibility as charter common carriers. All of Arctic Gas' discussions with the carriers have been on the basis that they must demonstrate in their proposed systems that there will be adequate spare capacity to avoid overloading of the services to communities along the pipeline route.

Recommendation #3 appears to be directed at CNT and thus would not be the responsibility of Arctic Gas.

Stability and Growth - Communications - Community Concerns (p. 27)

The response given by Arctic Gas to the recommendations under the heading "Action Communities - Communications - Community Concerns" (p. 43) is equally applicable to these recommendations.

Stability and Growth - Effect of Construction Schedule on Logistics and Transport (p. 28)

Recommendations

2. It is recommended that procedures be established to ensure that any necessary departure from initial schedules will not reduce local employment and subcontracting in transport and that previously agreed-to salaries and wages shall be paid.

RESPONSE:

This cannot be agreed to by Arctic Gas.

3. It is recommended that in any situation where the Company and/or its subcontractors require unplanned-for transport resources, and the use of such resources (to compensate for departures from the initial schedule) means withdrawal of transport services from territorial residents, the Company should be responsible for the full cost of providing emergency back-up transportation services to communities. The replacement emergency services (e.g. air to replace water transport) are to be provided through a government agency or crown corporation such as the Authority or NTCL.

RESPONSE:

The recommendation is acceptable, and the Company should be responsible for transport costs to provide replacement transportation for community support where such support was diverted to Company use to ful-

fill unplanned-for requirements. The Company, however, must be free to select the agency to furnish the back-up service at the time of the need.

CHAPTER 2

PROTECTION OF THE ENVIRONMENT AND LAND

CHAPTER II

PROTECTION OF THE ENVIRONMENT AND LAND

Arctic Gas has reviewed Chapter II of the Commission Counsel Submissions.

Responses have been prepared to many of the recommendations, and in most of these cases, new recommendations are proposed which we believe better provide for the required environmental protection, while at the same time allow the project to proceed.

Where no response is provided to a proposed recommendation, Arctic Gas accepts the general intent of the recommendation; however, we would want to review the details of the recommendation with the Agency before they are finalized.

Some obvious discrepancies in the text leading to the recommendations have not been discussed, nor have the recommendations to the government.

WILDLIFE PROTECTION - MAMMALS

CARIBOU AND REINDEER

RECOMMENDATION

2. The Company shall not undertake any construction activity on the pipeline right-of-way in areas of the Yukon Coastal Plain calving and post-calving areas, during periods which could provide disturbance to caribou.

Comment: The sensitive periods are generally between May 20 to July 15. The Agency may permit some activities at specific sites provided that the activity and their support services do not provide disturbance to nearby caribou.

RESPONSE

These sensitive periods (May 20 to July 15) are related to very site-specific locations and therefore, there may not be problems working between these dates in some areas. Also, the type of activity will have a bearing on the potential for disturbance to caribou.

SUGGESTED RECOMMENDATION

2. The Company shall not undertake any activity which shall cause undue disturbance to caribou during calving and post-calving aggregations on the Yukon coastal plain.

Comment: The sensitive periods are generally between May 20 to July 15.

The Agency may permit some activities at specific sites provided that the activity and its support services do not provide disturbance to nearby caribou.

CARIBOU AND REINDEER

RECOMMENDATION

7. To minimize aircraft disturbance to caribou during sensitive periods the Company shall control flying heights and frequency of project related air traffic over critical caribou calving, post-calving or other concentrations (see "Aircraft Control"). Minimum aircraft altitudes of 2,500 feet above ground are needed for adequate protection of sensitive caribou concentrations.

Comment: Aircraft movements over occupied caribou winter range should be confined to flight corridors corresponding, wherever possible, to the right-of-way or access roads.

RESPONSE

Arctic Gas research has indicated that 600 ft AGL minimum overflights did not unduly disturb caribou. Hence, 2,000 ft minimum level presently being utilized by Arctic Gas provides an ample safety factor. There is no evidence that greater heights provide any greater protection.

SUGGESTED RECOMMENDATION

7. To minimize aircraft disturbance to caribou during sensitive periods the Company shall control flying heights and frequency of project-related air traffic over critical caribou calving, post-calving, or other concentrations (see "Aircraft Control"). Minimum aircraft

altitudes of 2,000 feet above ground are needed for adequate protection of sensitive caribou concentrations.

Comment: Aircraft movements over occupied caribou winter range should be confined to flight corridors corresponding, wherever possible, to the right-of-way or access roads.

CARIBOU AND REINDEER

RECOMMENDATION

9. The Company shall develop contingency plans for the suppression of fires that show a high priority for fire control in critical caribou wildlife habitat.

RESPONSE

The Company will develop fire contingency plans for all areas of its operations.

SUGGESTED RECOMMENDATION

9. The Company shall develop fire contingency plans.

MOOSE

RECOMMENDATION

14. The Company shall, when locating the right-of-way and ancillary facilities (e.g. haul roads, borrow sites, stockpiles, airfields and wharves) avoid significant alterations to class 1 moose habitat areas and especially to critical moose wintering areas (Prescot et al., 1973).

RESPONSE

The wording "significant alteration" is difficult to define. We would suggest replacing this wording with "degradation".

SUGGESTED RECOMMENDATION

14. The Company shall, when locating the right-of-way and ancillary facilities (e.g. haul roads, borrow sites, stockpiles, airfields and wharves) avoid wherever possible degradation of class 1 moose habitat areas and especially moose wintering areas (Prescot et al., 1973).

MOOSE

RECOMMENDATION

16. The Company shall restrict access and minimize disturbance to critical moose wintering.

Comment: Measures to minimize disturbance such as restricting aircraft overflights as described above for caribou should apply.

RESPONSE

It may be impossible or unnecessary to restrict access, and we would suggest changing "restrict" to "minimize".

SUGGESTED RECOMMENDATION

16. The Company shall minimize access and disturbance to critical moose wintering areas.

Comment: Measures to minimize disturbance such as restricting aircraft overflights as described above for caribou should apply.

GRIZZLY, POLAR AND BLACK BEARS

RECOMMENDATION

17. Prior to final design the Company shall identify grizzly and polar bear den sites within 1/2 mile of the right-of-way and pipeline related facilities. This survey should be repeated before construction begins.

RESPONSE

Survey of any area other than the actual right-of-way or areas immediately adjacent seems pointless considering winter construction. Since bear den sites are not always the same every year, surveys prior to final design are neither necessary nor useful.

SUGGESTED RECOMMENDATION

17. Prior to construction, the Company shall identify grizzly and polar bear den sites on or adjacent to the right-of-way and pipeline-related facilities.

GRIZZLY, POLAR AND BLACK BEARS

RECOMMENDATION

19. The Company shall institute measures to ensure that;

    a. low-flying do not harass grizzly, polar and black bears; and

    b. man-bear conflict encounters are minimized.

Comment: Feeding of bears should be viewed as an act that threatens human life. The Company should insist that any person feeding bears should be immediately dismissed.

RESPONSE

Due to the labour implications and job requirements, it may be necessary to only discipline the employee.

SUGGESTED RECOMMENDATION

19. The Company shall institute measures to ensure that:

    a. low-flying aircraft do not harass grizzly, polar and black bears; and

    b. man-bear conflict encounters are minimized.

Comment: Feeding of bears should be viewed as an act that threatens human life. The Company should insist that any person feeding bears should be disciplined in an appropriate manner.

GRIZZLY, POLAR AND BLACK BEARS

RECOMMENDATION

21. The Company shall collect and incinerate domestic waste (see "Solid Wastes: Camps and Facilities") to prevent attraction of bears to construction sites and facilities.

RESPONSE

Incineration of waste might not be feasible in all cases, or there may be superior ways of disposal.

SUGGESTED RECOMMENDATION

21. The Company shall collect and suitably dispose of domestic waste (see "Solid Wastes: Camps and Facilities") to prevent attraction of bears to construction sites and facilities.

GRIZZLY, POLAR AND BLACK BEARS

RECOMMENDATION

22. The Company shall take measures to restrict access by bears to all areas containing domestic waste. Access shall also be suitably restricted to fuel storage areas when flexible walled storage bladders (which can be ruptured by bears) are used.

RESPONSE

Is it possible to design structures that can restrict bears and are these feasible to use?

SUGGESTED RECOMMENDATION

22. The Company shall take measures to discourage access by wildlife to all areas containing domestic waste. Facilities should be designed which will discourage access by bears to fuel storage areas when flexible walled storage bladders (which could be ruptured by bears) are used.

DALL SHEEP

RECOMMENDATION

26. The Company shall obtain site specific Agency approval for borrow pit operations and blasting to be undertaken within 2 miles of occupied sheep range at critical times (ie. wintering, lambing, and mineral lick areas). Requests for this approval shall demonstrate that scheduling and other mitigative measures have provided adequate disturbance protection to the sheep and that the necessary access or haul roads will not increase human access to sheep concentration areas.

RESPONSE

We do not know the basis for the 2-mile specification, but evidence based on Arctic Gas disturbance research shows that 1 mile would be adequate. The only concern is with the Mt. Goodenough population, where the circum-delta route approaches the fringes of the winter range.

SUGGESTED RECOMMENDATION

26. The Company shall obtain site-specific Agency approval for borrow pit operations and blasting to be undertaken within 1 mile of occupied sheep range at critical times (i.e. wintering, lambing, and mineral lick areas). Requests for this approval shall demonstrate that scheduling and other mitigative measures have provided

adequate disturbance protection to the sheep and that the necessary access or haul roads will not increase human access to sheep concentration areas.

DALL SHEEP

RECOMMENDATION

27. The Company shall not construct airstrips or helicopter pads within 2 miles of critical sheep range. (see also "Aircraft Control").

RESPONSE

We do not know the basis for the 2-mile specification, but evidence based on Arctic Gas disturbance research shows that 1 mile would be adequate. The only concern is with the Mt. Goodenough population, where the circum-delta route approaches the fringes of the winter range.

SUGGESTED RECOMMENDATION

27. The Company shall not construct airstrips or helicopter pads within 1 mile of critical sheep range. (see also "Aircraft Control").

DALL SHEEP

RECOMMENDATION

28. The Company shall ensure that all project-related aircraft flights abide by minimum heights and overflight restrictions issued by the Agency and designed to avoid disturbance of Dall sheep in critical habitat at sensitive times.

Comment: In order to adequately protect sheep during the sensitive winter and lambing periods, aircraft should avoid critical habitat by a horizontal distance of 2 miles and any necessary overflights should maintain above-ground altitudes of at least 2,500 feet.

RESPONSE

We do not know the basis for a horizontal distance of 2 miles avoidance zone. The overflight minimum altitude of 2,000 feet is an adequate protection measure, which is substantiated by Arctic Gas research.

SUGGESTED RECOMMENDATION

28. The Company shall ensure that all project-related aircraft flights abide by minimum heights and overflight restrictions issued by the Agency and designed to avoid disturbance of Dall sheep in critical habitat at sensitive times.

Comment: In order to adequately protect sheep during the sensitive winter and lambing periods, aircraft overflights should maintain AGL minimum elevations of 2,000 feet.

MUSKOXEN

RECOMMENDATION

31. The Company shall develop specific contingency plans to deal with potential encounters with muskoxen during winter construction on the Yukon Coastal Plain.

Comment: These should include methods of herding muskoxen away from construction areas. Each encounter with muskoxen should be reported to the Agency and such reports should include details on means of displacement if necessary.

RESPONSE

There is no recent data to show that there are any muskoxen on the Yukon coast. This stipulation is not restrictive, but it is meaningless.

SUGGESTED RECOMMENDATION

31. The Company shall develop specific contingency plans to deal with potential encounters with muskoxen, if required.

Comment: These should include methods of herding muskoxen away from construction areas. Each encounter with muskoxen should be reported to the Agency and such reports should include details on means of displacement, if necessary.

ARCTIC AND COLOURED FOXES

RECOMMENDATION

33. Prior to final design, the Company shall identify all arctic and colored fox den sites within 1/2 mile of the boundaries of the right-of-way, borrow sites and other facilities (including access and haul roads). Construction and related activities should not come within 100 yards of prime denning areas unless authorized by the Agency.

RESPONSE

The 1/2 mile boundary on either side of the right-of-way is an unnecessarily large area within which to require identification of the exact location of the den sites.

SUGGESTED RECOMMENDATION

33. Prior to final design, the Company shall identify all arctic and colored fox den sites on or adjacent to the boundaries of the right-of-way, borrow sites, and other facilities (including access and haul roads). Construction and related activities should not come within 100 yards of prime denning areas unless authorized by the Agency.

ARCTIC AND COLORED FOXES

RECOMMENDATION

36. The Company shall take preventive measures, such as erection of fencing, to prevent foxes from establishing den sites under buildings or in stockpile or other facility areas.

RESPONSE

It is company policy to fence all major installations for environmental, safety, and security reasons.

SUGGESTED RECOMMENDATION

36. The Company shall take preventive measures, such as erection of fencing, to prevent foxes from establishing den sites under buildings or in stockpile or other facility areas.

WHITE WHALES

RECOMMENDATION

General: The Company shall avoid disturbance of white (beluga) whales during all construction, operation and related phases of the project.

The Government should designate a whale sanctuary in Mackenzie and Shallow Bays so that developmental activity would be excluded from that area used by calving and nursing whales.

RESPONSE

This recommendation is too vague inasmuch as it does not define either the proposed sanctuary boundary or the area used by calving and nursing whales. It should also specify what constitutes developmental activity in view of intensive barge and aircraft activity from many other sources in the Mackenzie Delta.

While we agree that development should be controlled at critical times, we do not believe it is necessary to designate the whole area as a sanctuary.

SUGGESTED RECOMMENDATION

General: The Company shall avoid disturbance of white (beluga) whales during all construction, operation and related phases of the project.

The Government should designate a whale sanctuary in Mackenzie and Shallow Bays so that developmental activity would be controlled in that area used by calving and nursing whales at critical times.

WHITE WHALES

RECOMMENDATION

38. If the Company is to build a pipeline along the cross-delta route, its crossing of Shallow Bay shall avoid the white whale sanctuary.

RESPONSE

An inviolate sanctuary, as proposed, is a broad and unsophisticated management tool at best--one that merits consideration only as a last resort. In our view, the data upon which the proposal is based are suggestive but not substantiative, and are not yet complete. A more efficient approach would be to experiment with other control measures that allow continued use of the resource by natives, and some concomitant use of the area by others, while at the same time carefully monitoring effects on reproduction. To eliminate all utilization of the area and its resources through a sanctuary approach would be premature at this time.

SUGGESTED RECOMMENDATION

38. If the Company is to build a pipeline along the cross-delta route, its crossing of Shallow Bay shall minimize disturbance to the white whales.

WHITE WHALES

RECOMMENDATION

39. Preferably, the Company should move its Shallow Bay crossing to a position entirely south of the area utilized by white whales (for example, the "Barry Route", Exhibit 457).

RESPONSE

There has been no biological or engineering study of this route alternate to date, and there are no substantive data that the route has any environmental advantage over the cross-delta route proposed by Arctic Gas.

SUGGESTED RECOMMENDATION

Delete.

WHITE WHALES

RECOMMENDATION

40. If the route is not so relocated, construction of the crossing or other activities disturbing to whales should avoid the entire period when whales are present in the Shallow Bay/Mackenzie Bay area.

Comment: In view of the overlap of the period of concern for whales and the periods of concern for waterfowl and particularly staging snow geese, winter construction of such a crossing is environmentally preferable and warrants study by the Company as an alternative to the present proposal for summer construction.

RESPONSE

The crossing is more than 4 miles wide and activities would be confined on a very localized basis at any one time. Arctic Gas is prepared to shut down operations for a period of one week to ten days in the unlikely event that construction activities are demonstrated to be disturbing to the whales. However, the many years of study on whales in the Shallow Bay area and on monitoring the effects of activity in this area have shown that the whales are not likely to be affected by pipeline construction. It should be noted that the white whales have been hunted and killed in substantial numbers in the delta area, which constitutes a significant disturbance.

In view of 1976 surveys on snow geese, where little to no use was made of Shallow Bay, there is no concern for "overlap of the period of concern" as the report states.

Winter construction could be very difficult and hazardous. We believe that with appropriate mitigative measures, the impact of summer construction is acceptable.

SUGGESTED RECOMMENDATION

40. Construction of the crossing or other activities found to be causing undue disturbance to whales will be discontinued during critical periods.

WHITE WHALES

RECOMMENDATION

41. The Company shall not use air cushion vehicles during the summer months (approximately 1 June to 31 August) near areas utilized by white whales for calving and nursing.

RESPONSE

The proposed period is too long. A more realistic tenure would be June 15 to July 31 in the west, and June 15 to August 31 in the east. This recommendation is proposed to exclude air cushion vehicles. More realistically, it should exclude noise as is generated by currently designed air cushion vehicles.

SUGGESTED RECOMMENDATION

41. No air cushion vehicle shall be used in or near areas being utilized by white whales for calving and nursing, where the noise generated by this vehicle causes significant disturbance to these whales.

WILDLIFE PROTECTION - BIRDS

RECOMMENDATION - General

The Company shall protect all birds and their habitat from adverse effects associated with the construction, operation and maintenance of the pipeline. In particular, the Company shall avoid disturbing raptor sites and important areas for waterfowl migration, nesting, feeding, moulting and staging.

The government should identify important and restricted ornithological areas and periods, particularly for raptors and waterfowl such as geese, and develop and impose special restrictions on access and aircraft activities in such areas.

RESPONSE

It will be impossible to protect all birds from adverse effects. We take it to mean all species of birds recognizing that individuals of many species will be affected, but that the welfare of a species should not be affected. Arctic Gas has identified sensitive ornithological areas and periods, particularly for raptors and waterfowl, and has developed restrictive design and construction techniques to accommodate these.

SUGGESTED RECOMMENDATION

The Company shall protect birds and their habitat from undue adverse effects associated with the construction, operation and maintenance

of the pipeline. The Company shall minimize disturbance to raptor sites and important areas for waterfowl migration, nesting, feeding, moulting, and staging.

RAPTORS

RECOMMENDATION

1. To assure incorporation of raptor concerns, especially those for peregrine falcons and gyrfalcons, the Company shall consult with the Canadian Wildlife Service (CWS) raptor biologist during all planning, design, logistics, construction and operation phases of the pipeline project.

RESPONSE

The Company should not have to consult formally with CWS, as the "one Agency" concept should eliminate this need. Our consultants maintain very close informal ties with all government agencies.

SUGGESTED RECOMMENDATION

1. To assure incorporation of raptor concerns, the Company shall be aware of concerns that CWS has expressed regarding the planned activities.

RAPTORS

RECOMMENDATION

2. In all Raptor Protection Zones identified by the government (see recommendation below) the Company shall control, restrict or otherwise alter its terrestrial and airborne activities and those of its contractors and subcontractors in such a manner as to avoid disturbance of the raptor and to conform to the directions of the CWS raptor biologist and the Agency.

RESPONSE

There should only be one authority, not CWS and the Agency. The Agency should get its advice from CWS or whomever else it feels is qualified to offer such.

SUGGESTED RECOMMENDATION

2. In all Raptor Protection Zones identified by the government (see recommendation below), the Company shall control, restrict, or otherwise alter its terrestrial and airborne activities and those of its contractors and subcontractors in such a manner as to minimize disturbance of the raptor and to conform to the directions of the Agency.

RAPTORS

RECOMMENDATION

3. All pipeline related activities including all forms of human access within a Raptor Protection Zone shall be covered by a separate construction application. The application shall be supported by documents, studies and site-specific plans that demonstrate that the proposed activity will not jeopardize the raptor nesting success in any way.

RESPONSE

Any concerns with regard to protection of raptors should be settled by the Company and the Agency during design review. There should be only one permit required to cover a particular construction area.

SUGGESTED RECOMMENDATION

Delete.

RAPTORS

RECOMMENDATION

4. The Company shall cease all activities within designated Raptor Protection Zones during sensitive periods and no later than the first day of territorial occupation by a raptor. Activities shall not recommence until the Agency has provided written permission to continue the work.

Comment: The following general planning guidelines for sensitive periods at raptor sites may be useful.

(a)	Peregrine falcons:	April 15 to August 31
(b)	golden eagles, bald eagles, and ospreys:	March 1 to August 31
(c)	gyrfalcons:	February 1 to August 31

RESPONSE

Blanket restrictions are generally unecessarily restrictive and costly. It will be difficult to determine when raptors reoccupy territory. More emphasis should be placed on peregrines compared to the other raptors. Thus, whereas every peregrine site should be protected, it is not as imperative to protect every golden eagle site. We would rank them in order of concern:

(1) peregrines

(2) gyrfalcons and bald eagles

(3) ospreys

(4) golden eagles

The dates for concern are as follows, but it should be noted that these dates should be specific to the type of activity or disturbance which might be incurred.

(1) gyrfalcons - July 31 rather than August 31; case could be made for more winter protection

(2) eagles and ospreys - mid-March to April 1; later dates for further north.

SUGGESTED RECOMMENDATION

4. The Company shall cease all activities which cause significant disturbance to specified raptors within designated Raptor Protection Zones during sensitive periods, and no later than the first day of territorial occupation by a raptor. Activities shall not recommence until the Agency has provided permission to continue the work.

Comment: The following general planning guidelines for sensitive periods at raptor sites may be useful.

(a)	peregrine falcons:	April 15 to August 31
(b)	golden eagles, bald eagles, and ospreys:	mid-March to April 1
(c)	gyrfalcons:	February 1 to July 31

RAPTORS

RECOMMENDATION

5. Where project activities are permitted within a Raptor Protection Zone during a time preceding the sensitive period, the Company shall be fully prepared to cease all operations and temporarily abandon all equipment as soon as the bird takes possession of the nest site.

RESPONSE

This recommendation is unnecessarily restrictive. It is also difficult to determine when raptors take possession of the nest site.

SUGGESTED RECOMMENDATION

5. Where project activities are permitted within a Raptor Protection Zone during a time preceding the sensitive period, the Company shall be prepared to cease activities causing disturbance in the vicinity of the nest.

RAPTORS

RECOMMENDATION

6. Aircraft shall maintain an altitude of at least 2,500 feet AGL while over any Raptor Protection Zone during the sensitive period. Lower level flights shall be diverted around the zone.

RESPONSE

Arctic Gas environmental research on gyrfalcons shows that disturbance was not evident when aircraft were 1,000 feet away from gyrfalcons. Thus, a minimum elevation of 2,000 feet AGL is adequate.

SUGGESTED RECOMMENDATION

6. Aircraft shall maintain an altitude of at least 2,000 feet AGL while over any Raptor Protection Zone during the sensitive period Lower level flights shall be diverted around the zone.

RAPTORS

RECOMMENDATION

7. Airstrips and helicopter pads shall be located so that all approaches and take-offs avoid the Raptor Protection Zones as noted.

RESPONSE

It may not be possible to avoid Raptor Protection Zones at all times due to terrain and weather conditions.

SUGGESTED RECOMMENDATION

7. Airstrips and helicopter pads shall be located so that approaches and take-offs avoid Raptor Protection Zones if possible.

RAPTORS

RECOMMENDATION

8. Pipeline surveillance flights less than 2,500 feet AGL, helicopter landings and motorized terrestrial access for maintenance or repair shall be prohibited within a Raptor Protection Zone during the sensitive period except as specifically authorized by the Agency.

RESPONSE

Arctic Gas studies of gyrfalcons indicate that a minimum AGL elevation of 2,000 ft is adequate. The surveillance flight regulations will be sufficiently limiting if the right-of-way is within the area.

SUGGESTED RECOMMENDATION

8. Pipeline surveillance flights less than 2,000 feet AGL, helicopter landings and motorized terrestrial access for maintenance or repair shall be prohibited within a Raptor Protection Zone during the sensitive period except as specifically authorized by the Agency.

RAPTORS

RECOMMENDATION

9. The Company shall prohibit blasting within any Raptor Protection Zone during the sensitive period except as authorized by the Agency. Blasting at other times of the year may be permitted where the Company demonstrates that the blasting would not damage the raptor nest site or its surroundings.

RESPONSE

The Company will be cognizant of raptor nest sites and shall consider the implication of construction work in the immediate vicinity.

SUGGESTED RECOMMENDATION

9. The Company shall restrict blasting within any Raptor Protection Zone during the sensitive period except as authorized by the Agency. Blasting at other times of the year may be permitted where the Company demonstrates that the blasting would not damage the raptor nest site or its surroundings.

WATERFOWL

RECOMMENDATION

11. The Company shall control, restrict and otherwise alter its terrestrial and airborne activities and those of all its contractors and subcontractors in such a manner as to avoid disturbance to waterfowl and their habitat and to comply with access and activity restrictions in important waterfowl areas defined by the Agency (see recommendation below).

Comment: Winter activities are recommended to avoid impact. Summer activities must be kept to a minimum.

RESPONSE

The statement "avoid disturbance" is too broad and ill-defined.

SUGGESTED RECOMMENDATION

11. The Company shall control, restrict and otherwise alter its terrestrial and airborne activities and those of all its contractors and subcontractors in such a manner as to avoid significant disturbance to waterfowl and their habitat and to comply with access and activity restrictions in important waterfowl areas defined by the Agency.

Comment: Winter activities are recommended to avoid impact. Summer activities must be kept to a minimum.

WATERFOWL

RECOMMENDATION

12. The Company shall demonstrate that the location and noise alteration devices applicable to each compressor station site are compatible with the wildlife characteristics of the surrounding area.

Comment: The Company should take particular note of the critical wildlife areas as outlined in recommendation 25 below. For example, the location of CA-05 and CA-06 will interfere with goose staging areas as well as a cluster of raptor nests (Poston et al., 1973, Inventory Maps). Also, noise emanating from compressor stations could pose disturbance problems if it exceeds about 50 dBA at the fence line.

RESPONSE

The stipulation of 50 dBA at the fence line is unrealistic and unnecessary.

SUGGESTED RECOMMENDATION

12. The Company shall demonstrate that the location and noise alteration devices applicable to each compressor station site are compatible with the wildlife characteristics of the surrounding area.

WATERFOWL

RECOMMENDATION

13. Because of the extensive disturbance created by air cushion vehicles to waterfowl, during nesting and rearing of young, these vehicles shall be prohibited, during periods of bird presence, from within 5 miles of the critical wildlife areas discussed in recommendation 25 below.

RESPONSE

The 5-mile figure is completely arbitrary and does not take into account the type of vehicle nor its potential for disturbance. Air cushion vehicles may well be designed so that noise emission is not a problem.

SUGGESTED RECOMMENDATION

13. Because of the disturbance created by existing air cushion vehicles to waterfowl, during nesting and rearing of young, these vehicles shall be used with due caution and will maintain an appropriate distance from the critical wildlife areas discussed in recommendation 25 below.

RARE AND/OR ENDANGERED SPECIES

RECOMMENDATION

3. With respect to the buff-breasted sandpiper, the routing of a gas pipeline along the Yukon Coastal Plain should avoid, in the Firth-Babbage Rivers area, dry tussock tundra sites which provide nest sites for the species.

RESPONSE

It will probably be impossible to avoid dry tussock tundra in the Firth-Babbage area. Steps can be taken to minimize disturbance to dry tussock areas. According to the literature, the display grounds and presumably nest sites vary from year to year, so there are no specific sites that would require avoidance. The work in this area will be done in the winter, and very little disturbance will result to the available nesting area.

SUGGESTED RECOMMENDATION

Delete.

WILDLIFE PROTECTION - WILDLIFE MANAGEMENT AND MONITORING

RECOMMENDATION - General

The Company shall cooperate with the government in implementing wildlife management programs in the Mackenzie Valley and the Northern Yukon.

The government should establish a well funded and comprehensive wildlife management program based on joint studies with the Company and implemented by establishing restrictions on developmental activity in certain critical areas and by controlling human access and hunting.

RESPONSE

The recommendation as stated is unreasonable. While the Company has an obligation to carry out impact research, monitoring and environmental protection, these are related to the pipeline proposal. It is unreasonable that the Company be charged with the responsibility for the cooperative implementation of wildlife management programs in large areas of the Mackenzie Valley and northern Yukon. Most wildlife management problems relate to hunting harvest of populations and to a lesser degree, protection of habitat. The latter has been the focus of CAGSL programs and the Inquiry. The former has no relevance to the pipeline and is a routine government responsibility, whether or not there is a pipeline development.

SUGGESTED RECOMMENDATION

The Company shall cooperate with the government in implementing wildlife management programs in the Mackenzie Valley and the Northern Yukon as they relate to pipeline activities.

RECOMMENDATION

1. The Company shall share with government the cost of the increased activities of game management agencies that will result from the project, including the cost of the new game management studies recommended in this report. An equal split of the costs is recommended.

RESPONSE

The cost of game management is a government responsibility. The Company has already supplied much of the required baseline biological data for implementation of game management practices.

SUGGESTED RECOMMENDATION

Delete.

RECOMMENDATION

2. The Company shall cooperate with the government in implementing a comprehensive wildlife management and monitoring scheme throughout the construction and operation of the pipeline project. In so doing, the Company shall make every effort to supervise and control its employees and contractors in accordance with the objectives and intent of the government's management scheme.

Comment: The Company should restrict the possession of firearms to only those persons who need them to assure protection of human life from wildlife. Also, individuals on the project should be dismissed from project employment for feeding or harassing wildlife..

RESPONSE

The Company will cooperate with the government on any programs which are related to the pipeline project. Persons who do not comply with company regulations will be disciplined.

SUGGESTED RECOMMENDATION

2. The Company shall cooperate with the government in implementing a wildlife management and monitoring scheme as it relates to the construction and operation of the pipeline. In so doing, the Company shall make every effort to supervise and control its employees and contractors in accordance with the objectives and intent of the government's management scheme.

Comment: The Company should restrict the possession of firearms to only those persons who need them to assure protection of human life from wildlife. Also, individuals on the project should be disciplined for feeding or harassing wildlife.

RECOMMENDATION

3. The Company shall adjust its pipeline routing and the location and nature of its activities to suit the critical wildlife concerns expressed by the government and these recommendations. In particular, the Company shall avoid areas such as Raptor Protection Zones, goose staging areas, caribou herds and whale nursing areas during their respective sensitive periods.

RESPONSE

In many critical areas, certain construction activities can be carried on without causing detrimental effects on the particular species.

SUGGESTED RECOMMENDATION

3. The Company shall adjust its pipeline routing and the location and nature of its activities to suit the critical wildlife concerns identified. In particular, the Company shall attempt to avoid areas such as Raptor Protection Zones, goose staging areas, caribou herds, and whale nursing areas during their respective sensitive periods, with activities which may prove detrimental to these areas.

RECOMMENDATION

International Management of Porcupine Caribou Herd

14. If a permit is granted for a pipeline across the northern Yukon to carry gas from Alaska, the Government of Canada should enter into an agreement with the Government of the United States for a common policy for protection of the Porcupine caribou herd and for the joint management of the herd.

RESPONSE

Regardless of whether or not a pipeline is built across the North Slope, an International agreement should be secured to ensure adequate management of the Porcupine caribou herd.

SUGGESTED RECOMMENDATION

No change.

WILDLIFE PROTECTION - AIRCRAFT CONTROL

RECOMMENDATION - General

The government should regulate aircraft operation within the project area by such means as air traffic corridors, minimum flying heights and frequency scheduling to minimize disturbance to those species of wildlife which are sensitive to aircraft disturbance.

This aircraft regulation should be administered by a "Flight Control Group" within the Agency which maintains day-to-day information on wildlife distribution movements and current knowledge of logistic needs of the Company. To increase the effectiveness of the controls, government should determine the level of disturbance to birds and mammals caused by each type of aircraft.

RESPONSE

Aircraft disturbance to wildlife studies have been conducted by Arctic Gas on many species. During the project, monitoring activities during actual operations would likely gather more useful information.

SUGGESTED RECOMMENDATION

The government should regulate aircraft operation within the project area by such means as air traffic corridors, minimum

flying heights and frequency scheduling to minimize disturbance to those species of wildlife which are sensitive to aircraft disturbance.

RECOMMENDATION

1. In consultation with the Agency, which will identify critical wildlife areas, the Company shall locate project airfields and orient runways so that flight approaches to landing points avoid overflights over environmentally sensitive areas. Where possible, airfields should be located three miles from sensitive areas.

RESPONSE

Due to terrain and prevailing wind directions, it may be impossible to orient airstrips such that flight paths avoid all sensitive areas. Sensitive areas would presumably include a buffer zone around the critical habitat so the need for avoiding the area by three miles is reduced.

SUGGESTED RECOMMENDATION

1. The Company shall locate project airfields and orient runways, if possible, such that flight approaches to landing points avoid overflights over environmentally sensitive areas.

RECOMMENDATION

4. The Company shall undertake aerial revegetation over designated sensitive wildlife areas only with specific Agency approval and only at such times and in such manners that disturbance to wildlife is avoided (see "Terrestrial and Aquatic Mammals").

RESPONSE

Avoidance of all disturbance to wildlife is unrealistic. It should be noted that much of the seeding will be done in winter, when most wildlife is not present.

SUGGESTED RECOMMENDATION

4. The Company shall undertake aerial revegetation over designated sensitive wildlife areas only with specific Agency approval and only at such times and in such a manner that disturbance to wildlife is acceptable (see "Terrestrial and Aquatic Mammals").

FISH PROTECTION - SUSPENDED SEDIMENT STANDARDS

RECOMMENDATION

3. These standards shall apply during construction activities, and afterwards for two years as a result of them.

RESPONSE

Construction should be carried out in such a manner that long-term effects are minimal.

SUGGESTED RECOMMENDATION

3. These standards shall apply during construction activities.

FISH PROTECTION - UNDERWATER BLASTING

RECOMMENDATION

1. Blasting shall not be permitted in waterbodies when and where:

   (a) fish eggs are present in the bed;

   (b) fish are spawning in restricted areas;

   (c) fish are overwintering in restricted areas; and

   (d) fish are migrating in concentrated schools.

   This exclusion shall apply to blasting within 1,000 feet of any of the above.

RESPONSE

Blasting should be restricted only where there is a potential for significant environmental disturbance.

SUGGESTED RECOMMENDATION

1. Blasting shall not be permitted in waterbodies where there is the potential for significant disruption to:

   (a) fish eggs present in the bed;

   (b) fish spawning in restricted areas;

   (c) fish overwintering in restricted areas; and

   (d) fish migrating in concentrated schools.

RECOMMENDATION

3. If fish are killed by a blasting operation, the blasting shall cease until effective measures are taken to protect the remaining fish (for instance, waiting for the fish to leave, removing the fish by netting or protecting them with blast deflectors).

RESPONSE

Prior to blasting, an evaluation will be completed to determine the presence of fish and protective measures will be taken as required.

SUGGESTED RECOMMENDATION

3. Prior to blasting, an evaluation will be completed to determine the presence of fish, and protective measures will be taken as required.

RECOMMENDATION

8. Where a requirement for blasting in a waterbody is identified during design and planning, the Company shall submit to the Agency an application for permission to blast, together with the information needed to assess the potential impact of blasting on fish and a statement of plans to protect the fish during blasting.

RESPONSE

Differentiation should be made between blasting in winter when no water is present and in summer when water and fish may be present.

SUGGESTED RECOMMENDATION

8. Before blasting restrictions are imposed, a determination will be made as to the potential for significant disruption to aquatic life.

FISH PROTECTION - MONITORING OF AQUATIC HABITAT

RECOMMENDATION

6 Fish tissue contaminant levels

RESPONSE

This is unnecessary, as Applicant will not be using these chemicals.

SUGGESTED RECOMMENDATION

Delete No. 6.

RECOMMENDATION

Requirements Prior to Construction

1. In order to plan for protection of fisheries, the Company shall compile a catalogue of fishing areas and fishing activities along the route. This catalogue will contain information on the following matters.

   a) A complete listing of fish species caught in the domestic, commercial and sport fisheries.

   b) The approximate sizes and weights of the fish caught in the above fisheries.

   c) The numbers of the fish caught in the domestic, commercial and sport fisheries.

   d) The time of year at which the fish are caught.

   e) The exaxt location where the fish are caught (i.e. net sites).

   f) The location of past, present and future potential fishing camps.

   g) The methods by which the fish are caught, including the mesh sizes of nets, the length and depth of nets, or of angling methods.

   h) An approximate estimate of catch per fishing effort.

   i) The stage in the life cycle at which the fish are caught (spawning run, overwintering, migration, etc.)

   j) The way fish are used after being caught.

   k) The methods by which the fish are preserved (smoking, drying, freezing, etc.)

l) The methods by which the fish are transported from the fishing site to location of usage and/or of processing.

m) The money spent in catching the fish at each fishery, particularly in commercial and sport fisheries.

n) The numbers of people involved in each fishery.

RESPONSE

This activity is outside the responsibility of the Company in the main. Certain investigations will be undertaken by the Company to determine resource use in areas of specific concern.

SUGGESTED RECOMMENDATION

1. In preparation of construction plans and final design, the Company shall be aware of local utilization of fish resources and conduct their operations to minimize impacts on these.

RECOMMENDATION

2. Before pipeline activity begins, government should set quotas for fishing areas along the pipeline route. The quotas shall be used as a basis for controlling the level of fishing activity by company personnel and any other changes in fishing activity in each area that results directly or indirectly from the pipeline project.

Comment: The quotas should be set at conservative levels bearing in mind the limited information available on fish population and the potential impacts of pipeline construction on fish. Ideally, quotas reflect the number of fish that can be removed from a population, on an ongoing basis, without causing a decline in numbers or quality: extensive biological research would be required to make accurate predictions.

RESPONSE

Arctic Gas policy is that no fishing will be allowed during the construction of the pipeline. It should also be noted that extensive biological research has been conducted by Applicant, and any future work would be limited.

SUGGESTED RECOMMENDATION

2. Before pipeline activity begins, government should set quotas for fishing areas along the pipeline route. The quotas shall be used as a basis for controlling the level of fishing activity by com-

pany personnel and any other changes in fishing activity in each area that results directly or indirectly from the pipeline project.

RECOMMENDATION

Location and Scheduling of Activities

3. Pipeline-related facilities and activities shall be located at least 1,000 yards from any existing well-defined domestic, sport or commercial fishery area.

RESPONSE

Each site should be evaluated on its own merits and arbitrary figures should not be selected to try to cover all situations.

SUGGESTED RECOMMENDATION

3. Pipeline-related facilities and activities shall be located in such a manner as to minimize disturbance of any existing well-defined domestic, sport or commercial fishery area.

RECOMMENDATION

4. All waterborne traffic shall avoid fish netting areas and the Company shall mark such locations with appropriate lighted navigation buoys.

RESPONSE

This is impractical and may prove detrimental to the fisherman in terms of stolen catches.

SUGGESTED RECOMMENDATION

4. All waterborne traffic shall avoid fish netting areas whenever possible.

RECOMMENDATION

5. Construction or operational personnel shall not fish within 1,000 yards of any domestic or commercial fishery areas. Boundaries to mark these areas shall be posted by the Agency.

RESPONSE

Arctic Gas construction personnel will not be permitted to fish. Resident operational personnel will abide by the Territorial regulations.

SUGGESTED RECOMMENDATION

5. Construction personnel will not be permitted to fish.

RECOMMENDATION

8. Pipeline construction and operational activities shall be scheduled so they do not disrupt seasonal fisheries along the route.

RESPONSE

Pipeline construction will be scheduled such that, whenever possible, it will minimally disrupt seasonal fishing activities.

SUGGESTED RECOMMENDATION

8. Pipeline construction will be scheduled such that, wherever possible, it will minimally disrupt seasonal fishing activities.

FISH PROTECTION - SITE-SPECIFIC RECOMMENDATIONS - FISH

RECOMMENDATION - General

The following recommendations identify some specific concerns for fish and fisheries protection along routes and associated work facilities that have been proposed by Foothills and Arctic Gas. This incomplete listing is designed to illustrate the kinds of situations where adjustment of the project at final design could reduce or avoid impacts on fish.

RESPONSE

These site-specific recommendations are potentially hazardous from an environmental standpoint because there is no apparent flexibility in such things as recommended distances, etc. These distances, by the way, are all arbitrary.

SUGGESTED RECOMMENDATION

The following recommendations identify some specific concerns for fish and fisheries protection along routes and associated work facilities that have been proposed by Foothills and Arctic Gas. This incomplete listing is designed to illustrate the kinds of situations where adjustment of the project at final design could reduce or avoid impacts on fish. Each site must be evaluated on its own merits and specific design measures implemented.

RECOMMENDATION

1. All fuel and chemical storage areas and major camps shall be located at least 1,000 feet from any river bank or shore. Camp and fuel storage facilities on river bank work pads shall be located on the part of a work pad farthest from the channel bank. This applies principally in the Mackenzie Delta.

RESPONSE

Arbitrary distances are meaningless. Each site must be reviewed and examined in its particular context.

SUGGESTED RECOMMENDATION

1. All fuel and chemical storage areas shall be located and designed in such a manner that the possibility of foreign substances entering a watercourse is minimized.

RECOMMENDATION

2. Stockpile sites shall be set back at least 300 feet from any river bank or shore.

RESPONSE

Each individual site should be examined on its own merit and then the exact location should be decided.

SUGGESTED RECOMMENDATION

2. The location of stockpile sites should be 300 feet from river banks or shores, if possible. The final location should be determined based on environmental and engineering design criteria.

RECOMMENDATION

3. Wharf sites shall be located at least 1/4 mile from any stream or river mouth.

RESPONSE

This is a site-specific situation where each individual site would have to be examined on its own merits.

SUGGESTED RECOMMENDATION

3. Wharf sites shall be located at least 1/4 mile from a stream or river mouth if possible.

RECOMMENDATION

4. A buffer strip of at least 300 feet of undisturbed terrain should be maintained between any pipeline or related facility and any major waterbody, bank or shore. River crossing work pads and wharf sites are exceptions to this condition.

RESPONSE

This is a site-specific situation where each individual site would have to be examined on its own merits.

SUGGESTED RECOMMENDATION

4. A buffer strip of undisturbed terrain, in the order of 300 feet in width, should be maintained where practical between any pipeline or related facility and any major waterbody, bank or shore. River crossing work pads and wharf sites are exceptions to this condition.

RECOMMENDATION

Yukon Coast

5. Water should not be removed in winter from any fish overwintering areas in springs or rivers of the North Slope. In areas of severe water shortage exceptions may be granted by the Agency for camp use only and where the volume of water to be removed will not adversely affect the fish.

RESPONSE

Water should not be removed if such removal proves detrimental to any fish populations overwintering in the springs or rivers. Mitigating measures such as downstream sump, minimum withdrawal, etc., will be observed.

SUGGESTED RECOMMENDATION

5. Water shall not be removed in winter from fish overwintering areas in an amount or manner which will be detrimental to fish populations overwintering in these areas.

RECOMMENDATION

Craig Creek

6. The migration route upstream to overwintering areas shall be maintained.

RESPONSE

There are no known overwintering areas on Craig Creek. Groundwater sources on Craig Creek were investigated in the fall and early winter of 1975 and found to be devoid of fish (Jones, 1976).

SUGGESTED RECOMMENDATION

Delete.

RECOMMENDATION

Fish Creek

8. The headwater spawning and overwintering areas and the groundwater sources of the creek shall be designated as an excluded area for fisheries and industrial development.

RESPONSE

The headwater spring areas upstream of the pipeline route on Fish Creek are important spawning and overwintering areas. Springs downstream of the pipeline route are not important fish areas and could be developed as water sources without damage to fish populations.

SUGGESTED RECOMMENDATION

8. The headwater spawning and overwintering areas and the groundwater sources of the creek shall be designated as an excluded area for fisheries and industrial development.

Comment: Springs downstream of the pipeline route are not important fish areas and could be developed as water sources without damage to fish populations.

RECOMMENDATION

Malcolm River

10. No water shall be removed from the open water area downstream of the crossing during winter.

RESPONSE

The springs on the Malcolm River downstream of the crossing are inhabited by juvenile arctic char and grayling during the winter. The fish are concentrated in the upper reaches of the spring areas, and water could be removed downstream of the fish concentrations without serious risk to fish populations.

It should be noted that the term "open water area" does not include all of the overwintering habitat associated with springs that is utilized by fish. In many cases fish, particularly larger individuals, move under the cover of ice and are not found in open water areas.

SUGGESTED RECOMMENDATION

10. Water must not be removed upstream of or from areas of fish concentrations in the upper reaches of the spring areas, where such activities may prove detrimental to the survival of overwintering fish populations.

RECOMMENDATION

Firth River

12. No water shall be removed from open water areas in the vicinity of the crossing during winter.

RESPONSE

The groundwater sources in the vicinity of the pipeline crossing are not heavily utilized by fish. During surveys in 1975, only one dead juvenile arctic char was observed in this groundwater area. Water can be withdrawn from this area without serious consequences to fish populations (Jones, 1976).

There are springs five miles northwest of the Firth River springs that are heavily utilized by arctic char for spawning and overwintering. These springs are in close proximity to the pipeline route and would be very sensitive to disturbance. No water should be withdrawn from these springs. No site-specific recommendations have been made concerning these springs (Jones, 1976).

SUGGESTED RECOMMENDATION

12. Water must not be removed from springs about 5 miles northwest of the proposed pipeline crossing, due to heavy usage by arctic char.

RECOMMENDATION

Spring River

13. No water shall be removed from open water areas in the vicinity of the proposed pipeline crossing during winter.

RESPONSE

There is no known fish overwintering in groundwater sources on the Spring River (Jones, 1976).

SUGGESTED RECOMMENDATION

Delete.

RECOMMENDATION

Crow River

15. Aufeis areas shall be protected from water removal or other construction activities.

RESPONSE

The aufeis areas and the groundwater sources associated with them are not utilized by fish populations for overwintering (Jones, 1976).

SUGGESTED RECOMMENDATION

15. Aufeis areas indicate groundwater flow which may sustain overwintering fish populations. If fish are supported during the winter by groundwater flow, water must not be removed in a manner that jeopardizes their survival.

RECOMMENDATION

38. At MP 556.5, the crossing of Hodgson Creek is a known overwintering area. Therefore, it shall be relocated, built between 15 July and 15 August (if otherwise acceptable), or disruptions mitigated in some other way.

RESPONSE

Arctic Gas believes that the proposed crossing is well above the overwintering area, but this will be reviewed.

SUGGESTED RECOMMENDATION

38. At MP 556.5, the crossing of Hodgson Creek is a suspected overwintering area. If confirmed, it should be relocated, built between 15 July and 15 August (if otherwise acceptable) or disruptions mitigated in some other way.

PHYSICAL ENVIRONMENT - TERRAIN, LANDSCAPE AND WATERBODIES

RECOMMENDATION

6. Undisturbed wilderness areas should be avoided or should not be unnecessarily disturbed. In all areas, the project should be adjusted to protect the "natural" or wilderness attributes of landscape and waterbodies.

RESPONSE

Wilderness is a concept difficult to define. The Company will limit unnecessary disturbance in all areas.

SUGGESTED RECOMMENDATION

6. The Company shall limit disturbance of natural areas to the minimum required for construction and operation of the facilities.

PHYSICAL ENVIRONMENT - AIR QUALITY

RECOMMENDATION

1. To avoid creating dust in or adjacent to communities, inhabited private property and public facilities, the Company shall carry out dust control measures (e.g. spreading calcium chloride). Such measures must be approved by the Agency, and agreed to by local residents.

RESPONSE

Chemicals used for dust abatement must be compatible with general environmental protection.

SUGGESTED RECOMMENDATION

1. To avoid creating dust in or adjacent to communities, inhabited private property, and public facilities, the Company shall carry out dust control measures (e.g., spreading calcium chloride). Such measures must be approved by the Agency, and agreed to by local residents.

Comment: Chemicals used for dust abatement must be compatible with general environmental protection.

RECOMMENDATION

3. Where people or transportation facilities could be affected by ice fog visibility problems aggravated by operation of a compressor station the Company shall submit to the Agency for approval, an analysis and data substantiating the air quality characteristics of their proposed location.

RESPONSE

It is not known at this time if ice fog will be a problem. It requires a site-specific evaluation.

SUGGESTED RECOMMENDATION

3. At compressor station sites, the Company shall perform an analysis and submit data substantiating the air quality characteristics if people or transportation facilities could be affected by ice fog visibility problems.

RECOMMENDATION

2. The Company shall minimize its use of land:

   a. by using existing borrow pits and quarries in preference to opening up new areas;

   b. by selecting sites and planning pit development so as to permit efficient use of the sites and the deposits and to avoid opening pits in unsuitable materials;

   c. by locating plant, storage facilities, spoil piles or stockpiled topsoil within the pit area rather than on adjacent ground; and

   d. by burying waste from the borrow operation within the pit area at the termination of its use.

RESPONSE

Existing borrow pits should be used if possible, but this may not always be the case.

SUGGESTED RECOMMENDATION

2. The Company shall minimize its use of land:

   a. by using existing borrow pits and quarries in preference to opening up new areas, where possible;

(no change in the rest)

PHYSICAL ENVIRONMENT - NOISE

GENERAL RECOMMENDATIONS

The Company shall take all feasible measures to alternate noise levels to preserve the natural state of the environment.

In establishing noise levels, the government should establish maximum levels for some distance from the source rather than some distance from the impacted element.

RESPONSE

Operational noise levels from compressor stations will be attenuated where they have a significant effect on wildlife or human pursuits.

SUGGESTED RECOMMENDATION

The Company shall attenuate compressor station noise where higher noise levels would significantly disturb wildlife or human pursuits.

SPECIAL LAND AREAS - LAND RESERVES

RECOMMENDATION

Wildlife Areas

These areas are proposed for provisional reservation based on testimony and exhibits before the Inquiry and are recommended for ultimate designation as Game or Bird Sanctuaries or Cooperative Wildlife Areas. The areas to be covered by these reserves should be delineated by the relevant wildlife agencies through the Wildlife Coordinating Committee proposed in the section of this report on "Game Management and Monitoring".

a. Mackenzie Bay White Whale Sanctuary

b. Mackenzie Bay Bird Sanctuary

c. Kendall Island Bird Sanctuary Extension

d. Mt. Goodenough Dall Sheep Range

e. Mackenzie River Islands (Spring migration areas)

f. North Slope

RESPONSE

Wildlife areas will be established by the various agencies having jurisdiction, and the terms of reference should be compatible with controlled development in any particular area.

SUGGESTED RECOMMENDATION

The government agencies should evaluate each proposed wildlife area in terms of permissible controlled development and establish these terms of reference.

SPECIAL LAND AREAS - RECREATION AREAS

RECOMMENDATION

5. The Company shall, to the utmost of its ability, route the pipeline so as to avoid waterbodies with significant aesthetic appeal and recreational potential by as wide a margin as necessary to minimize the impact on these attributes and shall locate facilities along this route so as to minimize adverse effects on these attributes.

RESPONSE

This is one of many considerations which must be evaluated when establishing a pipeline route.

SUGGESTED RECOMMENDATION

5. The Company shall endeavor to route the pipeline so as to avoid waterbodies with significant aesthetic appeal or recreational potential by as wide a margin as is compatible with engineering, environmental, and sociological considerations.

RECOMMENDATION

6. The Company shall not route the pipeline across both a river and its tributary if re-routing downstream of the confluence is feasible, and, in any case where the Company deems it not feasible to comply, it shall submit to the Agency a full and detailed comparison of the route alternatives.

RESPONSE

It is the practice to minimize water crossings wherever other considerations permit.

SUGGESTED RECOMMENDATION

6. The Company shall minimize water crossings consistent with engineering, environmental and sociological constraints.

RECOMMENDATION

7. The Company shall not route the pipeline closer than one mile to large lakes, groups of lakes and "scarce" lakes except where severe topographic constraints (such as a mountain pass) prevent this.

Comment: A "scarce" lake is one which takes on aesthetic and recreational importance in large measure because it is the only one in a generally lakeless area.

The outdoor recreationist, through enriching his experience on the water, also enhances his perspective of the landscape by viewing it from the water. This aesthetic enhancement cannot be protected by the narrow buffer zone adequate to protect fish from siltation: hence the one mile wide buffer.

RESPONSE

The pipeline route should be determined after analyzing the site-specific conditions and an arbitrary figure should only be used as a guideline.

SUGGESTED RECOMMENDATION

7. The pipeline route should not be placed closer than one mile to large lakes, groups of lakes, and "scarce" lakes except where severe topographic constraints (such as mountain pass), engineering constraints, environmental and sociological constraints prevent this.

Comment: A "scarce" lake is one which takes on aesthetic and recreational importance in large measure because it is the only one in a generally lakeless area.

The outdoor recreationist, through enriching his experience on the water, also enhances his perspective of the landscape by viewing it from the water. This aesthetic enhancement should be protected by an adequate buffer zone as determined by site-specific criteria.

RECOMMENDATION

3. The project should be funded by the Company according to a budget to be written by the project director. The selection of the director, the means or organizing the project, the level of the budget, and all other aspects of the project should be subject to the approval of the Company, the Agency, and the ASC/NMM pipeline committee; this committee should be placed in a supervisory role for the purpose of monitoring the conduct and success of the archaeological project throughout its duration.

RESPONSE

The archaeological program should be conducted by Company personnel with outside expertise available in the form of an external advisory body.

SUGGESTED RECOMMENDATION

3. The Company shall conduct archaeological surveys prior to any field construction of all facilities sites and rights-of-way (roads, airstrips, pipeline, etc.). Where a conflict arises, the route will be realigned or the site salvaged prior to construction. The Company shall conduct the surveys, salvage where required (including lab analysis and cataloguing of artifacts), and monitoring of actual construction activities.

SPECIAL LAND AREAS - ENVIRONMENTAL INDICES

GENERAL RECOMMENDATIONS

Prior to the commencement of the pipeline project, the government should initiate a program to investigate and establish a comprehensive set of environmental indices for the Mackenzie Valley, Northern Yukon and Beaufort Sea region.

RESPONSE

This is nothing but a futile attempt to portray in simple, meaningful ecological terms the complexity of ecosystems. Various ecological models have been developed during recent years, but even the most world-renowned modelers (e.g. George Van Dyne) have admitted that the "state of the art" has not yet been sophisticated to the extent whereby ecosystems can be accurately characterized in model form.

SUGGESTED RECOMMENDATION

Delete.